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L. P. Schultz

REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

AND

FINANCIAL REPORT OF THE EXECUTIVE COMMITTEE OF THE BOARD OF REGENTS

1948

SMITHSONIAN INSTITUTION
WASHINGTON, D. C.

REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

AND

FINANCIAL REPORT OF THE EXECUTIVE COMMITTEE OF THE BOARD OF REGENTS

FOR THE

YEAR ENDED JUNE 30

1948

(Publication 3952)

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THE SMITHSONIAN INSTITUTION

June 30, 1948

Presiding Officer ex officio.—Harry S. Truman, President of the United States.
Chancellor.—Fred M. Vinson, Chief Justice of the United States.
Members of the Institution:
Harry S. Truman, President of the United States.
——— Vice President of the United States.
Fred M. Vinson, Chief Justice of the United States.
George C. Marshall, Secretary of State.
John W. Snyder, Secretary of the Treasury.
James Forrestal, Secretary of Defense.
Tom C. Clark, Attorney General.
Jesse M. Donaldson, Postmaster General.
Julius A. Krug, Secretary of the Interior.
Charles F. Brannon, Secretary of Agriculture.
Charles Sawyer, Secretary of Commerce.
——— Secretary of Labor.
Regents of the Institution:
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——— Vice President of the United States.
Alben W. Barkley, Member of the Senate.
Wallace H. White, Jr., Member of the Senate.
Walter F. George, Member of the Senate.
Clarence Cannon, Member of the House of Representatives.
Samuel K. McConnell, Jr., Member of the House of Representatives.
John M. Vorys, Member of the House of Representatives.
Harvey N. Davis, citizen of New Jersey.
Arthur H. Compton, citizen of Missouri.
Vannevar Bush, citizen of Washington, D. C.
Robert V. Fleming, citizen of Washington, D. C.
Executive Committee.—Robert V. Fleming, Vannevar Bush, Clarence Cannon.
Secretary.—Alexander Wetmore.
Assistant Secretary.—John E. Graf.
Assistant Secretary.—J. L. Keddy.
Treasurer.—J. D. Howard.
Chief, editorial division.—Webster P. True.
Librarian.—Leila F. Clark.
Administrative accountant.—Thomas F. Clark.
Personnel officer.—B. T. Carwithen.
Chief, publications division.—L. E. Commerford.
Purchasing officer.—Anthony W. Wilding.

UNITED STATES NATIONAL MUSEUM

Director.—A. Remington Kellogg.

SCIENTIFIC STAFF

DEPARTMENT OF ANTHROPOLOGY:

Frank M. Setzler, head curator; A. J. Andrews, chief preparator.

Collaborator in anthropology: W. W. Taylor, Jr.

Division of Archeology: Neil M. Judd, curator; Waldo R. Wedel, associate curator; M. C. Blaker, scientific aid; J. Townsend Russell, honorary assistant curator of Old World archeology.

Division of Ethnology: H. W. Krieger, curator; J. C. Ewers, associate curator; R. A. Elder, Jr., assistant curator.

Division of Physical Anthropology: T. Dale Stewart, curator; M. T. Newman, associate curator.

DEPARTMENT OF ZOOLOGY:

Waldo L. Schmitt, head curator; W. L. Brown, chief taxidermist; Aime M. Awl, illustrator.

Associates in Zoology: T. S. Palmer, W. B. Marshall, A. G. Böving, C. R. Shoemaker.

Collaborator in Zoology: R. S. Clark.

Collaborator in Biology: D. C. Graham.

Division of Mammals: D. H. Johnson, associate curator; A. Brazier Howell, collaborator; Gerrit S. Miller, Jr., associate.

Division of Birds: Herbert Friedmann, curator; H. G. Deignan, associate curator; Alexander Wetmore, custodian of alcoholic and skeleton collections; Arthur C. Bent, collaborator.

Division of Reptiles and Amphibians: Doris M. Cochran, zoologist.

Division of Fishes: Leonard P. Schultz, curator; R. R. Miller, associate curator; L. P. Woods, associate curator; D. S. Erdman, scientific aid; W. T. Leapley, scientific aid.

Division of Insects: L. O. Howard, honorary curator; Edward A. Chapin, curator; R. E. Blackwelder, associate curator; W. D. Field, associate curator; Grace E. Glance, associate curator; W. L. Jellison, collaborator.

Section of Hymenoptera: S. A. Rohwer, custodian; W. M. Mann, assistant custodian; Robert A. Cushman, assistant custodian.

Section of Myriapoda: O. F. Cook, custodian.

Section of Diptera: Charles T. Greene, assistant custodian.

Section of Coleoptera: L. L. Buchanan, specialist for Casey collection.

Section of Lepidoptera: J. T. Barnes, collaborator.

Section of Forest Tree Beetles: A. D. Hopkins, custodian.

Division of Marine Invertebrates: F. A. Chace, Jr., curator; P. L. Illg, associate curator; Frederick M. Bayer, assistant curator; Mrs. Harriet Richardson Searle, collaborator; Max M. Ellis, collaborator; J. Percy Moore, collaborator; Joseph A. Cushman, collaborator in Foraminifera; Mrs. M. S. Wilson, collaborator in copepod Crustacea.

Division of Mollusks: Harald A. Rehder, curator; Joseph P. E. Morrison, associate curator; R. Tucker Abbott, assistant curator; W. J. Byas, museum aid; P. Bartsch, associate.

Section of Helminthological Collections: Benjamin Schwartz, collaborator.

Division of Echinoderms: Austin H. Clark, curator.

DEPARTMENT OF BOTANY (NATIONAL HERBARIUM):

E. P. Killip, head curator; Henri Pittier, associate in botany.

Division of Phanerogams: A. C. Smith, curator; E. C. Leonard, associate curator; C. V. Morton, associate curator; E. H. Walker, associate curator; Lyman B. Smith, associate curator.

Division of Grasses: Jason R. Swallen, curator; Agnes Chase, research associate; F. A. McClure, research associate.

Division of Cryptogams: E. P. Killip, acting curator; Paul S. Conger, associate curator; G. A. Llano. associate curator; O. F. Cook, assistant curator; John A. Stevenson, custodian of C. G. Lloyd mycological collections; W. T. Swingle, custodian of Higher Algae; David Fairchild, custodian of Lower Fungi.

DEPARTMENT OF GEOLOGY:

R. S. Bassler, head curator; J. H. Benn, exhibits preparator; Jessie G. Beach, aid.

Division of Mineralogy and Petrology: W. F. Foshag, curator; E. P. Henderson, associate curator; G. S. Switzer, associate curator; B. O. Reberholt, exhibits preparator; Frank L. Hess, custodian of rare metals and rare earths.

Division of Invertebrate Paleontology and Paleobotany: Gustav A. Cooper, curator; A. R. Loeblich, Jr., associate curator; A. L. Bowsher, associate curator; J. Brookes Knight, research associate in Paleontology.

Section of Invertebrate Paleontology: T. W. Stanton, custodian of Mesozoic collection; J. B. Reeside, Jr.. custodian of Mesozoic collection.

Division of Vertebrate Paleontology: C. L. Gazin, curator; D. H. Dunkle, associate curator; Norman H. Boss, chief exhibits preparator; A. C. Murray, F. L. Pearce, preparators.

Associates in Mineralogy: W. T. Schaller, S. H. Perry, J. P. Marble.

Associate in Paleontology: T. W. Vaughan.

Associate in Petrology: Whitman Cross.

DEPARTMENT OF ENGINEERING AND INDUSTRIES:

Frank A. Taylor, head curator.

Division of Engineering: Frank A. Taylor, acting curator.

Section of Civil and Mechanical Engineering: Frank A. Taylor, in charge.

Section of Marine Transportation: Frank A. Taylor, in charge.

Section of Electricity: K. M. Perry, associate curator.

Section of Physical Sciences and Measurement: Frank A. Taylor, in charge.

Section of Land Transportation: S. H. Oliver, associate curator.

Division of Crafts and Industries: W. N. Watkins, curator; F. C. Reed, associate curator; E. A. Avery, museum aid; F. L. Lewton, research associate.

Section of Textiles: G. L. Rogers, assistant curator.

Section of Wood Technology: William N. Watkins, in charge.

Section of Manufactures: F. C. Reed, in charge.

Section of Agricultural Industries: F. C. Reed, in charge.

Division of Medicine and Public Health: G. S. Thomas, associate curator.

Division of Graphic Arts: J. Kainen, curator; E. J. Fite, museum aid.

Section of Photography: A. J. Wedderburn, Jr., associate curator.

DIVISION OF HISTORY: T. T. Belote, curator; Charles Carey, associate curator; M. L. Peterson. associate curator; M. W. Brown, assistant curator; J. Russell Sirlouis, scientific aid.

Section of Civil History: T. T. Belote, in charge.

Section of Military History: C. Carey, in charge.

Section of Naval History: C. Carey, in charge.

Section of Numismatics: T. T. Belote, in charge.

Section of Philately: C. L. Manning, assistant curator.

ADMINISTRATIVE STAFF

Chief, office of correspondence and records.—H. S. BRYANT.

Superintendent of buildings and labor.—L. L. OLIVER.

Assistant superintendent of buildings and labor.—CHARLES C. SINCLAIR.

Editor.—PAUL H. OEHSER.

Accountant and auditor.—T. F. CLARK.

Photographer.—F. B. KESTNER.

Purchasing officer.—A. W. WILDING.

Assistant librarian.—ELISABETH H. GAZIN.

NATIONAL GALLERY OF ART

Trustees:

FRED M. VINSON, Chief Justice of the United States, *Chairman.*
GEORGE C. MARSHALL, Secretary of State.
JOHN W. SNYDER, Secretary of the Treasury.
ALEXANDER WETMORE, Secretary of the Smithsonian Institution.
SAMUEL H. KRESS.
FERDINAND LAMMOT BELIN.
DUNCAN PHILLIPS.
CHESTER DALE.
PAUL MELLON.

President.—SAMUEL H. KRESS.

Vice President.—FERDINAND LAMMOT BELIN.

Secretary-Treasurer.—HUNTINGTON CAIRNS.

Director.—DAVID E. FINLEY.

Administrator.—HARRY A. MCBRIDE.

General Counsel.—HUNTINGTON CAIRNS.

Chief Curator.—JOHN WALKER.

Assistant Director.—MACGILL JAMES.

NATIONAL COLLECTION OF FINE ARTS

Director.—THOMAS M. BEGGS; G. J. MARTIN, exhibits preparator.

FREER GALLERY OF ART

Director.—A. G. WENLEY.

Assistant Director.—J. A. POPE.

Research associate.—GRACE DUNHAM GUEST.

Associate in Near Eastern art.—RICHARD ETTINGHAUSEN.

Associate in Far Eastern art.—W. R. B. ACKER.

BUREAU OF AMERICAN ETHNOLOGY

Director.—MATTHEW W. STIRLING.

Associate Director.—FRANK H. H. ROBERTS, Jr.

Senior ethnologists.—H. B. COLLINS, Jr., JOHN P. HARRINGTON, W. N. FENTON.

Senior anthropologists—G. R. WILLEY, P. DRUCKER.

Collaborators.—FRANCES S. DENSMORE, JOHN R. SWANTON, A. J. WARING, Jr.

Editor.—M. HELEN PALMER.

Librarian.—MIRIAM B. KETCHUM.

Illustrator.—EDWIN G. CASSEDY.

INSTITUTE OF SOCIAL ANTHROPOLOGY.—G. M. FOSTER, Jr., *Director.*

RIVER BASIN SURVEYS.—FRANK H. H. ROBERTS, Jr., *Director.*

INTERNATIONAL EXCHANGE SERVICE

Acting Chief.—D. G. Williams.

NATIONAL ZOOLOGICAL PARK

Director.—William M. Mann.
Assistant Director.—Ernest P. Walker.
Head Keeper.—Frank O. Lowe.

ASTROPHYSICAL OBSERVATORY

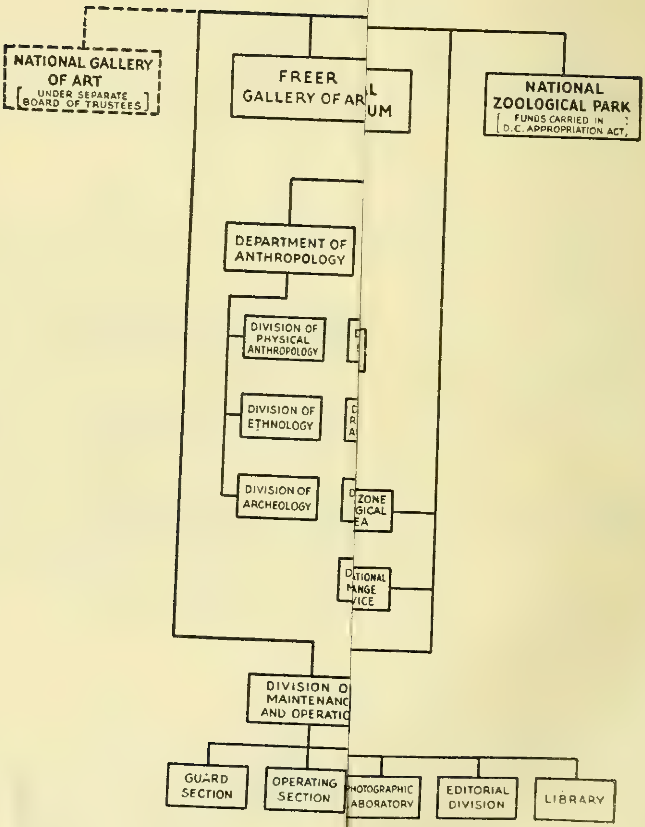
Director.—Loyal B. Aldrich.
Division of Astrophysical Research:
  Chief.—William H. Hoover.
  Instrument makers.—D. G. Talbert, J. H. Harrison.
  Research associate.—Charles G. Abbot.
Division of Radiation and Organisms:
  Acting chief, in charge.—Loyal B. Aldrich.
  Biologist (biophysicist).—Leonard Price.
  Chemist.—O. J. Williams.
  Biological aid (botany).—V. B. Elstad.

NATIONAL AIR MUSEUM

Advisory Board:
  Alexander Wetmore, *Chairman.*
  Maj. Gen. E. M. Powers, *U. S. Army Air Forces.*
  Rear Adm. A. M. Pride, *U. S. Navy.*
  Grover Loening.
  William B. Stout.
Assistant to the Secretary for the National Air Museum.—Carl W. Mitman.
Curator.—P. E. Garber.
Associate curator.—S. L. Beers.
Exhibits preparator.—S. L. Potter.

CANAL ZONE BIOLOGICAL AREA

Resident Manager.—James Zetek.



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REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

ALEXANDER WETMORE

FOR THE YEAR ENDED JUNE 30, 1948

To the Board of Regents of the Smithsonian Institution:

GENTLEMEN: I have the honor to submit herewith my report showing the activities and condition of the Smithsonian Institution and its bureaus during the fiscal year ended June 30, 1948.

GENERAL STATEMENT

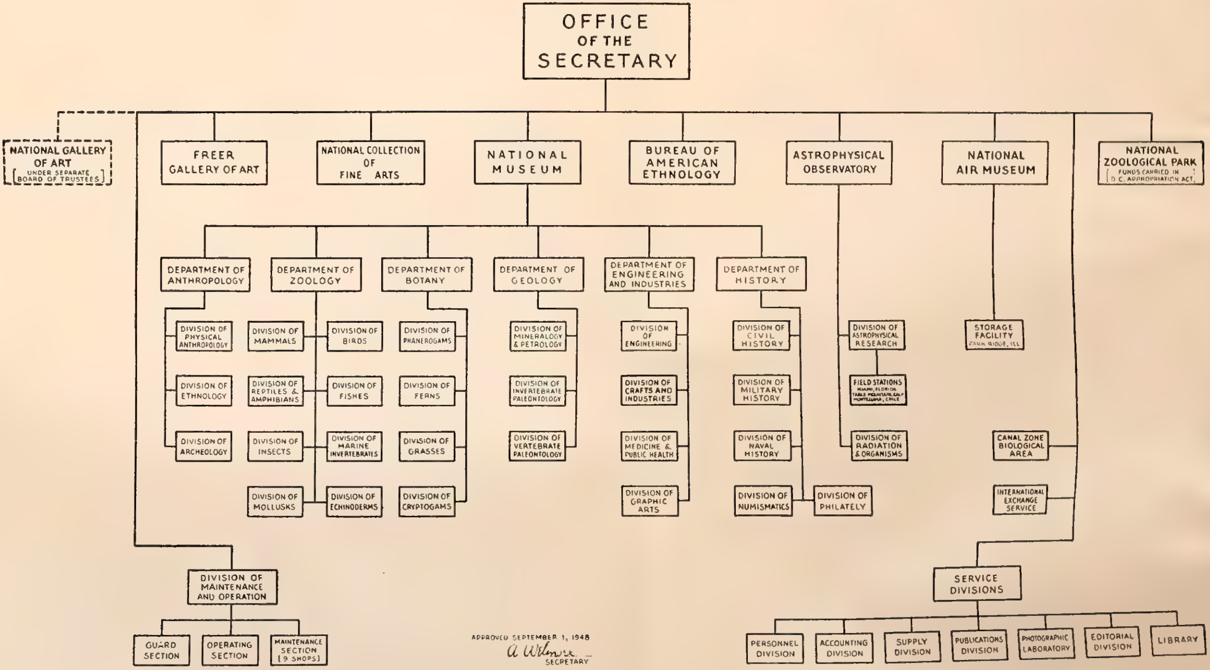
The Institution carries out its purpose, "the increase and diffusion of knowledge among men," by numerous methods, but the basic means remain the same as those proposed by the first Secretary, Joseph Henry—namely, scientific research, exploration, and publication. These features interweave to form the pattern of activities of the Institution and of the scientific bureaus that have grown up around it and through which it now largely operates. Other features have been added as the Institution has grown and expanded—for example, museum and art gallery exhibits, which diffuse knowledge to several million visitors each year, and the International Exchange Service for the interchange of publications with the rest of the world.

In the first part of this report I present general features of the work of the Institution, together with brief summaries of the achievements of the bureaus, the whole giving a composite picture of the Smithsonian Institution in the year 1948. For those interested in further details, fuller reports on each bureau are presented as appendixes. These include the United States National Museum, the National Gallery of Art, the National Collection of Fine Arts, the Freer Gallery of Art, the Bureau of American Ethnology, the International Exchange Service, the National Zoological Park, the Astrophysical Observatory, the National Air Museum, and the Canal Zone Biological Area. Appendixes 11 and 12 consist of reports on the Smithsonian library and on the publications of the Institution. The report concludes with the financial statement of the executive committee of the Board of Regents.

As the Institution moves into its second century of operation, it is still handicapped by certain shortages in personnel and especially by lack of adequate buildings. An institution for the increase and dif-

SMITHSONIAN INSTITUTION

ORGANIZATION CHART


OFFICE OF THE SECRETARY
NATIONAL GALLERY OF ART [UNDER SEPARATE BOARD OF TRUSTEES]
FREER GALLERY OF ART
NATIONAL COLLECTION OF FINE ARTS
NATIONAL MUSEUM
BUREAU OF AMERICAN ETHNOLOGY
ASTROPHYSICAL OBSERVATORY
NATIONAL AIR MUSEUM
NATIONAL ZOOLOGICAL PARK [FUNDS CARRIED IN D. C. APPROPRIATION ACT]
DEPARTMENT OF ANTHROPOLOGY
DIVISION OF PHYSICAL ANTHROPOLOGY
DIVISION OF ETHNOLOGY
DIVISION OF ARCHEOLOGY
DEPARTMENT OF ZOOLOGY
DIVISION OF MAMMALS
DIVISION OF REPTILES & AMPHIBIANS
DIVISION OF INSECTS
DIVISION OF MOLLUSKS
DIVISION OF BIRDS
DIVISION OF FISHES
DIVISION OF MARINE INVERTEBRATES
DIVISION OF ECHINODERMS
DEPARTMENT OF BOTANY
DIVISION OF PHANEROGAMS
DIVISION OF FERNS
DIVISION OF GRASSES
DIVISION OF CRYPTOGAMS
DEPARTMENT OF GEOLOGY
DIVISION OF MINERALOGY & PETROLOGY
DIVISION OF INVERTEBRATE PALEONTOLOGY
DIVISION OF VERTEBRATE PALEONTOLOGY
DEPARTMENT OF ENGINEERING AND INDUSTRIES
DIVISION OF ENGINEERING
DIVISION OF CRAFTS AND INDUSTRIES
DIVISION OF MEDICINE & PUBLIC HEALTH
DIVISION OF GRAPHIC ARTS
DEPARTMENT OF HISTORY
DIVISION OF CIVIL HISTORY
DIVISION OF MILITARY HISTORY
DIVISION OF NAVAL HISTORY
DIVISION OF NUMISMATICS
DIVISION OF PHILATELY
DIVISION OF ASTROPHYSICAL RESEARCH
FIELD STATIONS MIAMI, FLORIDA TABLE MOUNTAIN, CALIF MONTEZUMA, CHILE
DIVISION OF RADIATION & ORGANISMS
STORAGE FACILITY PARK RIDGE, ILL
CANAL ZONE BIOLOGICAL AREA
INTERNATIONAL EXCHANGE SERVICE
DIVISION OF MAINTENANCE AND OPERATION
GUARD SECTION
OPERATING SECTION
MAINTENANCE SECTION [9 SHOPS]
SERVICE DIVISIONS
PERSONNEL DIVISION
ACCOUNTING DIVISION
SUPPLY DIVISION
PUBLICATIONS DIVISION
PHOTOGRAPHIC LABORATORY
EDITORIAL DIVISION
LIBRARY

APPROVED SEPTEMBER 1, 1948
A. Wetmore
SECRETARY

fusion of knowledge cannot remain static. Its scientific studies in various fields and its great and growing collections in all fields of natural history and of human endeavor demand the constant attention of an adequate staff. Laboratories and large research collections without sufficient personnel for their scientific study cannot increase knowledge. It is only as collections are correctly classified, new forms discovered and described, and groupings and relationships analyzed and reassesssed that new knowledge emerges for the benefit of mankind. For example, with an insufficient number of trained workers in various divisions of the National Museum, the actual care of the collections requires such a large proportion of the time of those now available that research is restricted. In some museum divisions, and in our other laboratories our efforts have brought about some increase of personnel, but in others the situation is still acute. Such efforts will be continued until an adequate staff for all divisions is assured.

The matter of space shortage is even more serious. The latest permanent building in the Smithsonian group—the Natural History Building of the National Museum—was opened to the public in 1911. In that year the number of visitors to the Smithsonian buildings totaled 525,207, and the total number of specimens in the National Museum was estimated at 6,328,660. For the fiscal year 1948 the number of visitors was 2,393,499—an increase of more than fourfold over 1911—and the total number of specimens reached 25,470,827—also a fourfold increase. In other words, the Smithsonian Institution has today the same amount of space that it had in 1911 in which to accommodate four times as many visitors and four times as many specimens. The inevitable result is a greatly overcrowded condition in the exhibition halls and in the study collections and laboratories, making expansion of public exhibits impossible and hampering scientific research.

The Smithsonian group of buildings is near the top of the list of Washington points of interest for visitors to the Nation's Capital from all parts of the country, and the public exhibits should be housed in modern buildings without crowding and with room for expansion as new material comes in. In the fiscal year 1946, a Public Buildings Act was introduced in Congress in which was included provision for several new Smithsonian buildings, among them a historical museum and a building for the engineering and industrial collections. The bill, however, failed of passage. In the year 1947, Congress passed a bill establishing the National Air Museum as a bureau of the Institution; this will require an adequate building. These matters are of vital concern to the proper functioning of the Institution, and the attempt to obtain adequate and up-to-date buildings will continue to be a primary concern of your Secretary.

A number of organizational changes were made during the year in the interests of better administration, notable among them being the creation of a new department in the National Museum—that of botany, which had formerly been a division under the department of biology. The latter was thereafter known as the department of zoology. Other changes will be noted in the appended reports on the bureaus of the Institution, but I should mention here the retirement of Harry W. Dorsey, Administrative Assistant to the Secretary. Mr. Dorsey had served the Institution faithfully and well for 59 years, and his long experience in handling important matters connected with the Secretary's office and his unique knowledge of the history of the Institution will be greatly missed.

INTERDEPARTMENTAL COMMITTEE ON SCIENTIFIC RESEARCH AND DEVELOPMENT

On December 24, 1947, President Harry S. Truman established by Executive Order the Interdepartmental Committee on Scientific Research and Development, to be composed of a representative from each of the following agencies: the Departments of Agriculture, Interior, Commerce, Army, Navy, and Air Force, the National Military Establishment, the Federal Security Agency, the Atomic Energy Commission, the National Advisory Committee for Aeronautics, the Veterans Administration, and the Smithsonian Institution. In brief, the duties of the Committee are to recommend improvements in the research and development programs of the Federal Government, to recommend changes in administrative policies and procedures designed to increase the efficiency of such programs, and to study and report on current policies and practices relating to Federal support for research.

Your Secretary was appointed Chairman of the Committee by the President. An organizational meeting was held at the White House on April 16, 1948, and shortly thereafter the work of the Committee got under way. As much of this work is obviously of a confidential nature, no report on it is made at this time.

THE ESTABLISHMENT

The Smithsonian Institution was created by act of Congress in 1846, according to the terms of the will of James Smithson, of England, who in 1826 bequeathed his property to the United States of America "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." In receiving the property and accepting the trust, Congress determined that the Federal Government was without authority to administer the trust directly, and, therefore, constituted an "establishment" whose statutory members are "the President, the Vice President, the Chief Justice, and the heads of the executive departments."

THE BOARD OF REGENTS

During the year the following changes occurred in the personnel of the Board of Regents:

On January 27, 1947, Representative Clarence Cannon was reappointed a regent for another term. On July 26, 1947, Robert V. Fleming was appointed a regent by Joint Resolution, for the statutory term of 6 years, to fill the vacancy caused by the resignation of Frederic A. Delano. On November 12 Mr. Fleming was given interim appointment by the Chancellor as a member and Chairman of the Executive Committee to serve until the next meeting, when election by the Board would take place. This appointment was confirmed at the meeting of January 16, 1948.

Proceedings.—The Board of Regents held its annual meeting on January 16, 1948. Present: Representative Clarence Cannon, Dr. Vannevar Bush, Dr. Harvey N. Davis, Representative John M. Vorys, Representative Samuel K. McConnell, Jr., Robert V. Fleming, Secretary Alexander Wetmore, and Assistant Secretary John E. Graf.

The Secretary presented his annual report covering the activities of the Institution and its bureaus, including the financial report of the Executive Committee, for the fiscal year ended June 30, 1947, which was accepted by the Board. The usual resolution authorizing the expenditure by the Secretary of the income of the Institution for the fiscal year ending June 30, 1949, was adopted by the Board.

The Secretary announced a further generous gift to the Institution by John A. Roebling in support of the work of the Astrophysical Observatory.

The National Air Museum began independent operations. The aeronautical collections of the United States National Museum, numbering approximately 3,500 specimens, were transferred to the Air Museum, together with pertinent records and files. The staff of the former division of aeronautics of the National Museum, consisting of a curator and clerk-stenographer, was also transferred. Under this new set-up the Nation-wide survey for aeronautical materials continued. Arrangements were under way to take over the temporary storage at Park Ridge, Ill., where the air force had been assembling historical collections for this Museum.

The Canal Zone Biological Area on Barro Colorado Island has utilized available funds for renovation and repair. John E. Graf, Assistant Secretary, visited the laboratory in June, in connection with its administration. T. F. Clark, fiscal officer for the Institution, also visited the island in October 1947 to check over methods of accounting and inventory to insure that these meet the most recent requirements of the General Accounting Office.

The annual report of the Smithsonian Art Commission was presented by the Secretary and accepted by the Board. A resolution was adopted to reelect the following members for 4-year terms: William T. Aldrich, James Fraser, George H. Edgell, Lloyd Goodrich. The following officers were reelected for the ensuing year: Chairman, Paul Manship; vice chairman, Robert Woods Bliss; secretary, Alexander Wetmore.

Regarding the Gellatly Collection, as reported at the last annual meeting the Court of Claims in an opinion dated May 5, 1947, stated that "there is no basis in law or equity to set aside the gift or transfer and no basis in law or equity to allow a recovery in behalf of the Gellatly estate." Following this opinion, under date of May 20, 1947, the Secretary, as the custodian of the property in question, received a demand, signed by Mrs. Gellatly's attorney, to surrender possession of the collection. On June 18, 1947, a summons was served on the Secretary which was turned over to the Department of Justice. That Department assigned Marvin C. Taylor, Special Attorney, to the case, and various legal procedures have followed.

As stated in last year's report, following a decision by the Civil Service Commission, the Smithsonian trust-funds employees were included under the Federal Retirement System as of May 18, 1947. The Secretary submitted to the Executive Committee of the Board of Regents a detailed plan for carrying out the transfer, which was approved by the Committee.

FINANCES

A statement on finances, dealing particularly with Smithsonian private funds, will be found in the report of the Executive Committee of the Board of Regents, page 152.

APPROPRIATIONS

Funds appropriated to the Institution for the fiscal year ended June 30, 1948, totaled $1,800,312, allotted as follows:

General administration	$51, 044
National Museum	560, 548
Bureau of American Ethnology	63, 352
Astrophysical Observatory	69, 951
National Collection of Fine Arts	32, 586
International Exchange Service	60, 815
Maintenance and operation	649, 352
Service divisions	267, 448
National Air Museum	38, 879
Canal Zone Biological Area	4, 999
Unallotted	1, 338
Total	1, 800, 312

In addition $949,426 was appropriated to the National Gallery of Art, a bureau of the Institution but administered by a separate board of trustees; and $455,400 was provided in the District of Columbia appropriation act for the operation of the National Zoological Park.

Besides these direct appropriations, the Institution received funds by transfer from other Federal Agencies, as follows:

From the State Department, from the appropriation Cooperation with the American Republics, 1948, a total of $94,882 for the operation of the Institute of Social Anthropology, including the issuance of publications resulting from its work.

From the National Park Service, Interior Department, $73,800 for archeological projects in connection with River Basin Surveys.

From the Navy Department, $11,000 for research studies on the effects of radiation upon marine life as a result of atomic bomb tests at Bikini Atoll.

VISITORS

An increase of 40,122 visitors to the Smithsonian Buildings was recorded over the previous year, the totals being 2,393,499, for 1948 and 2,353,377 for 1947. August 1947 was the month of largest attendance, with 334,578 visitors; July 1947, the second largest, with 324,815.

A summary of attendance records is given in table 1:

TABLE 1.—*Visitors to the Smithsonian Buildings during the year ended June 30, 1948*

	Smithsonian Bldg.	Arts and Industries Bldg.	Natural History Bldg.	Aircraft Bldg.	Freer Gallery of Art	Total
1947						
July	84, 741	132, 059	71, 128	24, 619	12, 268	324, 815
August	68, 144	138, 059	92, 225	26, 436	9, 714	334, 578
September	41, 260	81, 068	49, 939	16, 702	7, 732	196, 701
October	31, 063	63, 580	41, 240	11, 031	5, 340	152, 254
November	24, 649	48, 643	37, 175	10, 267	4, 630	125, 364
December	17, 235	30, 760	26, 491	6, 231	3, 150	83, 867
1948						
January	15, 342	31, 752	25, 158	6, 942	3, 050	82, 244
February	18, 435	36, 526	29, 342	9, 020	3, 356	96, 679
March	28, 466	71, 396	48, 299	14, 730	5, 467	168, 358
April	48, 670	123, 800	75, 136	19, 363	8, 305	275, 274
May	52, 050	125, 976	86, 819	19, 067	7, 471	291, 383
June	50, 953	115, 538	67, 752	19, 924	7, 815	261, 982
Total	481, 008	999, 157	[1] 650, 704	184, 332	78, 298	2, 393, 499

[1] Not including 21,308 persons attending meetings after 4:30 p. m.

FIFTEENTH JAMES ARTHUR ANNUAL LECTURE ON THE SUN

In 1931 the Institution received a bequest from James Arthur, of New York, a part of the income from which was to be used for an annual lecture on some aspect of the study of the sun.

The fifteenth Arthur lecture, entitled "Mexican Calendars and the Solar Year," was given by Dr. Herbert J. Spinden, of the Brooklyn

Museum, on March 3, 1948, in the auditorium of the National Museum. This lecture, with illustrations, will be published in the Annual Report of the Board of Regents of the Smithsonian Institution for 1948.

SUMMARY OF THE YEAR'S ACTIVITIES OF THE BRANCHES OF THE INSTITUTION

National Museum.—Additions to the Museum's collections numbered 507,000 specimens, coming mostly as gifts from individuals or as transfers from Government agencies. The total number of specimens in the Museum at the close of the year was 25,470,827. Among outstanding accessions for the year were: In anthropology, 2,000 archeological specimens from Cerro de las Mesas, Veracruz, collected by the National Geographic-Smithsonian Expedition, the famous Kensington stone lent by the Alexandria (Minn.) Chamber of Commerce, and casts of the famous Tepexpan skull from Mexico; in zoology, large collections of birds from Colombia, Panamá, Paraguay, and India, and valuable collections of fishes, mollusks, and marine invertebrates from the resurvey of Bikini Atoll; in botany, 5,000 specimens of fungi bequeathed by the late William H. Long, of Albuquerque, N. Mex., and 9,100 plants collected by H. A. Allard in the Dominican Republic; in geology, five meteorites not previously represented, many thousands of fossil invertebrates, including 15,000 Paleozoic and Cretaceous fossils collected by the curator of the division, and a number of outstanding fossil vertebrates including the skull and other bones of a very rare tillodont from the Bridger formation in Wyoming; in engineering and industries, a collection of 20,000 items assembled by the late Charges B. Chaney, Jr., bearing on the history of railroads, and equipment used in the first practical synchronization of sound in motion pictures; in history, a large collection from the estate of the late Victor L. Huberich including among other things 2,500 specimens of United States, Canadian, and Japanese paper money.

Field parties from the Museum's departments of anthropology, zoology, botany, and geology visited many parts of the world, including Arnhem Land in Australia, the Antarctic continent, the Bikini area in the Pacific, the Persian Gulf, Colombia, Panamá, and numerous localities in the United States. Changes in the Museum organization included the dividing of the department of biology into two departments—those of zoology and botany. The division of aeronautics was separated from the Museum to become the nucleus of the National Air Museum, a newly created bureau of the Smithsonian Institution. Dr. Remington Kellogg, formerly curator of the division of mammals, became Director of the Museum on May 26, 1948.

National Gallery of Art.—Visitors to the Gallery totaled 2,159,435 for the year, an increase of more than 700,000 over the previous year's figure. This large increase was due in part to the crowds attracted by the paintings from the Berlin museums, which were shown at the Gallery for more than a month in the spring of 1948. During the showing, the attendance totaled 964,970, which is believed to be a world record for museums or art galleries for a comparable period of time. Accessions to the Gallery for the year numbered 1,360, including 113 portraits presented by the A. W. Mellon Educational and Charitable Trust, 8 paintings by fifteenth and sixteenth century Italian and German artists presented by Mrs. Ralph Harmon Booth, and 199 additional prints and drawings given by Lessing J. Rosenwald. Nine special exhibitions were held at the Gallery, and two traveling exhibitions were circulated to art galleries and museums throughout the country. A book of illustrations on the painting and sculpture in the Widener Collection was issued, and additional fine-quality color reproductions of paintings in the Gallery were made available to the public. Many thousands attended the Gallery's special tours and lectures, and a calendar of events was mailed out to more than 3,000 persons a month. The Sunday evening concerts at the Gallery were continued with undiminished popularity, 47 such concerts being given before capacity audiences during the year.

National Collection of Fine Arts.—Ruel P. Tolman, Director, retired during the year and was succeeded by Thomas M. Beggs, Assistant Director, formerly professor of art at Pomona College, Claremont, Calif. At the annual meeting of the Smithsonian Art Commission on December 2, 1947, four oil paintings were accepted for the National Collection. Four miniatures, water color on ivory, were acquired through the Catherine Walden Myer fund. A number of art works were lent to other organizations for use in connection with special exhibitions. Six paintings were purchased from the Henry Ward Ranger fund and assigned to various art institutions. Any such purchase may be claimed by the National Collection during the 5-year period beginning 10 years after the artist's death, and two paintings by Bruce Crane were so claimed during the year. Photographic prints and post cards of art works in the National Collection are available for the public, and large numbers were sold during the year. Nine special exhibitions were held under the auspices of the National Collection of Fine Arts, for most of which catalogs were made available by the organizations holding the exhibitions.

Freer Gallery of Art.—Additions to the collections included Chinese bronze, ivory, lacquer, painting, and pottery; and Persian manuscript, painting, and pottery. The work of the professional staff was devoted to the study of new accessions and to general research within the collections of Chinese, Japanese, Arabic, Persian, and Indian materials. Reports were made upon 3,498 objects and 1,108 photographs of objects submitted for examination. The very delicate task of repairing and restoring the Whistler "Peacock Room" was begun during the year. Visitors to the Gallery totaled 77,012 for the year, and 1,650 persons visited the main office for special information. Sixteen groups were given special instruction in the exhibition galleries by staff members.

Bureau of American Ethnology.—Dr. M. W. Stirling, Director of the Bureau, conducted archeological excavations in western Panamá for 3½ winter months in cooperation with the National Geographic Society, discovering a new, very early culture unrelated to anything heretofore known in the Republic. Dr. Frank H. H. Roberts, Jr., Associate Director, was occupied mainly in directing the River Basin Surveys, a unit of the Bureau set up to recover archeological material that would be lost through construction of dams and the creation of river valley reservoirs. Surveys, with limited testing of sites, were made in 18 States and 38 reservoir areas. A total of 1,576 sites have been found, of which 250 were recommended for excavation.

Dr. John P. Harrington prepared a number of manuscripts in the field of Indian linguistics, among them a 750-page grammar of the Maya language. Dr. Henry B. Collins, Jr., as chairman of the Board of Governors of the Arctic Institute of North America, devoted considerable time to the affairs of that organization. Late in the year, he left Washington to conduct archeological work for the Smithsonian and the National Museum of Canada on islands in the Canadian Arctic Archipelago. Dr. William N. Fenton carried on field work among the Seneca in western New York and started an extensive program of historical research connected with the League of the Iroquois. Dr. Philip Drucker spent nearly half the year on detail to the River Basin Surveys, taking charge of the work in the Columbia Basin. During the rest of the year he completed two monographs, one on the Nootkan tribes of British Columbia, the other on the Mexican La Venta culture. Dr. Gordon R. Willey wrote additional sections of a report on "Ancon and Supe: Formative Period Sites of the Central Peruvian Coast," and nearly completed a monograph on the archeology of the Florida Gulf Coast. Dr. Willey accompanied Dr. Stirling on the archeological expedition to western Panamá, and also worked in Tennessee for 1½ months on detail to the River Basin Surveys.

The Institute of Social Anthropology, an autonomous unit of the Bureau, is financed by State Department funds to carry out cooperative training in social anthropological teaching and research with the other American republics. Under the directorship of Dr. George M. Foster, members of the staff gave courses in various phases of anthropological study and conducted cooperative field work in Brazil, Colombia, México, and Perú. The Bureau issued volumes 3 and 4 of the Handbook of South American Indians and four publications of the Institute of Social Anthropology.

International Exchanges.—The Smithsonian International Exchange Service is the official United States agency for the interchange of governmental and scientific publications between this country and the other nations of the earth. The number of packages handled by the Service during the year was 760,119, with a total weight of 812,189 pounds. These totals represent an increase over last year of 56,321 packages and 38,214 pounds. The first shipments of exchange publications to Japan since the war were made this year. Consignments are now sent to all countries except Rumania, and negotiations are in progress for resumption of exchange relations with that country. The Exchange Service now sends abroad 94 sets of United States official publications, 73 copies of the Federal Register, and 66 copies of the Congressional Record, in return for similar material received from other nations.

National Zoological Park.—The year was a satisfactory one at the Park in that a number of unusually interesting animals were received, progress was made in recruiting personnel for the organization, and various repairs and minor improvements were made to buildings and grounds. The chief needs of the Zoo are more maintenance funds and new buildings to replace the remaining antiquated unsuitable structures built many years ago. The year's visitors reached a total of 3,040,540, an increase of more than 300,000 over the previous year's figure. The number of groups coming to the Zoo from schools was 1,454, comprising 79,249 individual students. These groups came from 27 different States, the most distant being Maine, Texas, and Wisconsin. The total number of animals in the collection at the close of the year was 2,797, representing 690 different species of mammals, birds, reptiles, and other forms. Among the exceptionally interesting animals received during the year were three species of penguins, a monkey-eating eagle, Mindanao tarsiers, and an Arctic fox.

Astrophysical Observatory.—W. H. Hoover was promoted to be Chief of the Division of Astrophysical Research. Dr. Earl S. Johnston, Chief of the Division of Radiation and Organisms, who has been responsible for the recent development of the Division, died during the year. He will be succeeded by Dr. Robert B. Withrow, of Purdue University.

The field stations at Montezuma, Chile, and Table Mountain, Calif., continued regular solar observations, and the values were checked and tabulated in Washington. The sun and sky radiation studies conducted for 2 years at Camp Lee, Va., under contract with the Office of the Quartermaster General, were terminated, but similar studies will go on at the Montezuma and Miami, Fla., stations.

During a search for the best possible site for a new high-altitude station, promising sites were located in México, southern California, and the Hawaiian Islands. Instruments were installed at each of the three sites for extended tests to determine which is the most satisfactory. A redetermination of the Smithsonian standard scale of solar radiation confirmed the Observatory's belief that the scale of a silver-disk pyrheliometer will remain unchanged for many years.

Research projects completed or well advanced during the year in the Division of Radiation and Organism included studies of the respiration of broad-leaf plants; investigations on the effects of environmental factors on the germination of seeds; and studies of the developmental physiology of grass seedlings.

The results of Observatory research appeared in nine papers published during the year.

National Air Museum.—Created as a bureau of the Smithsonian Institution in 1946, the National Air Museum did not begin actual operations in its own right until August 1, 1948, when its first appropriation of $50,000 became available. Thereupon the Institution's aeronautical collections and staff were transferred to the Air Museum, the staff was increased from two to seven persons, and separate offices were provided in the Arts and Industries Building of the National Museum. The Air Museum's Advisory Board met twice during the year and made two important decisions: 1, that there be used as a storage depot for the temporary safekeeping of Air Museum material a part of the Douglas aircraft plant built during World War II on the outskirts of Park Ridge, Ill., 20 miles from Chicago; and 2, that the Air Museum should be located in the Washington area and that the aid of the Public Buildings Administration be enlisted in designing an adequate air museum building. The Public Buildings Administration later in the year submitted a preliminary plan for a building which was approved by the Board. Numerous improvements were made to the present exhibits in the Aircraft Building, and several special exhibits were prepared during the year. A large part of the time of the curatorial staff was devoted to surveys to determine what items should be added to the aeronautical collections and what material was available throughout the country. A total of 330 objects were acquired during the year, the largest number of aeronautical acquisitions recorded in any year of the Smithsonian's history.

Canal Zone Biological Area.—This tropical laboratory on Barro Colorado Island, placed under Smithsonian administration in 1946, celebrated its twenty-fifth anniversary on April 17, 1948, and in honor of the occasion the Canal Zone issued a special commemorative 10-cent stamp. The island is maintained as a completely unspoiled tropical forest area, with laboratory facilities for investigations in biology and related subjects. Some 20 scientists from numerous universities and institutions came to the island to carry on investigations in widely varied fields, including army-ant studies, a survey of the fresh-water fishes, termite control through soil poisoning and wood treatment, the effects of tropical conditions on photographic materials and equipment, and studies of deterioration in the Tropics of fabrics, foodstuffs, and other materials. The most urgent needs of the laboratory are a more adequate supply of electricity, an enlarged library building, and new water-storage tanks. The water-supply problem became so serious that preliminary work has already been done on the site of a new tank in the hope that the project may be completed next year.

PUBLICATIONS

The Institution's publications constitute a principal means of carrying out the "diffusion of knowledge" stipulated by the founder, James Smithson. Starting with a single series in 1848, this important phase of Smithsonian work has expanded with the growth of the Institution until today its publications appear in 14 separate series, as follows:

Smithsonian Institution: Annual Report; Miscellaneous Collections; Special Publications.
United States National Museum: Annual Report; Bulletin; Proceedings; Contributions from the National Herbarium.
Bureau of American Ethnology: Annual Report; Bulletin.
Astrophysical Observatory: Annals.
National Collection of Fine Arts: Catalog.
Freer Gallery of Art: Oriental Studies; Occasional Papers.
Institute of Social Anthropology: Publications.

These various series present the scientific findings of staff members and collaborators of the Institution, as well as of outside scientists working on its collections.

During the year, a total of 76 volumes and pamphlets were published. Among the year's outstanding publications may be mentioned a new member of the Institution's family of tables—"Smithsonian Elliptic Functions Tables," by G. W. and R. M. Spenceley; a Spanish edition of the "Compendio y descripción de las Indias Occidentales," by Antonio Vázquez de Espinosa, transcribed by Charles Upson Clark, which had been published by the Institution in English translation several years ago; "A List and Index of the Publications of the United States National Museum (1875–1946)"; volumes 3 and 4 of the "Handbook of South American Indians" (volumes 5 and 6, the last two volumes, were in press at the close of the year).

A total of 165,740 copies of publications in all series were distributed during the year. A complete list of the year's publications will be found in Appendix 12.

LIBRARY

The Smithsonian library received during the year 53,129 publications, mainly in those fields of science and art with which the Institution is concerned. Among outstanding gifts was the library of the late Charles B. Chaney, of Laurel, Md., a collection of 1,510 publications on the history of railroads. A number of rare, older books needed in connection with the Institution's researches were purchased for the library.

Volumes and pamphlets were cataloged to the number of 6,148, and 35,357 cards were added to catalogs and shelflists, but the large backlog of cataloging remained untouched for lack of sufficient personnel to do the work. A total of 10,151 publications were borrowed for use outside the library, and the library staff answered more than 15,000 reference questions. For use in aiding destroyed libraries overseas, 36,701 pieces were selected from the Smithsonian library's collection of duplicates.

The total number of volumes in the library at the close of the year was 915,987, more than half of which are housed as the Smithsonian Deposit in the Library of Congress.

Respectfully submitted.

ALEXANDER WETMORE, *Secretary.*

APPENDIX[1]

REPORT ON THE UNITED STATES NATIONAL MUSEUM

SIR: I have the honor to submit the following report on the condition and operation of the United States National Museum for the fiscal year ended June 30, 1948.

COLLECTIONS

More than 507,000 specimens were added to the Museum's collections during the year, divided among the various departments as follows: Anthropology, 16,585; zoology, 226,889; botany, 54,292; geology, 107,332; engineering and industries, 22,961; history, 79,337. Though considerably less than last year's 757,000 specimens, the total was still better than average. Most of the accessions were acquired as gifts from individuals or as transfers from Government departments and agencies. The complete report on the Museum, published as a separate document, includes a detailed list of the year's acquisitions, of which the more important are summarized below. Catalog entries in all departments now total 25,470,827.[1]

Anthropology.—The largest archeological accession consisted of more than 2,000 specimens from Cerro de las Mesas, Veracruz, collected a few years ago by a National Geographic-Smithsonian Expedition under the direction of M. W. Stirling. Nearly 500 potsherds, projectile points, and other artifacts, excavated from a Hopewellian village site near Batchtown, Ill., came as a gift. The famous Kensington stone was lent to the Museum for 6 months through the courtesy of the Alexandria (Minn.) Chamber of Commerce.

In the division of ethnology, the Far East was well represented in new material received, objects from India, Siam, Japan, and Korea being noteworthy. Interesting ethnological specimens came also from Africa, especially three fine native wood carvings. An unusually well-documented collection of Plains Indian and Apache materials included several rare pieces of special historical interest, such as the famed shield of Big Bow, a Kiowa warrior. Thirty-eight watercolor paintings, illustrating the folk costumes of the peoples of Central and South America, the West Indies, and the Seminoles of Florida, were presented by the artist, Carl Folke Sablin.

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[1] Revised estimates of specimens made this year in some departments, in addition to the normal increase, have raised last year's total by nearly 6,000,000.

Among the specimens accessioned in the division of physical anthropology were four casts of the Tepexpan skull and the head of this skull as restored by the Washington sculptor Leo Steppat. Skeletal material was accessioned representing Indian sites in Calhoun, Madison, and Jersey Counties, Ill.—additions to similar material of previous years.

Zoology.—Important mammalian accessions included collections from the Arctic, Labrador and Newfoundland, Quebec and Maine, eastern Pennsylvania, Panamá, and Egypt. As in past years the W. L. Abbott fund financed wholly or in part the acquisition of several avian collections, containing a considerable number of forms new to the Museum collections and to science; of these may be mentioned 2,630 skins and 145 skeletons of Colombian birds, over 900 birdskins collected by the Smithsonian-Yale Expedition to Nepal, 835 skins and skeletons of birds from the Panamanian jungles, 237 birdskins from India, and 166 from Paraguay. Noteworthy among the reptilian material received were 1,200 specimens of burrowing snakes of the genera *Sonora* and *Tantilla* from Oklahoma and Texas; 50 Egyptian and 250 Guatemalan reptiles and amphibians; 75 reptiles from Bikini; about 50 Brazilian amphibians and 100 Peruvian reptiles and amphibians, and nearly 400 reptiles and amphibians from Virginia and North Carolina.

This year, as last, the ichthyological collections were greatly enriched by the field studies made at Bikini Atoll for the United States Navy by members of the Museum staff. More than 6,000 fishes from this region were accessioned as a result of the 1947 Bikini Scientific Resurvey. Other large fish collections included nearly 14,000 specimens from Guatemala; about 6,400 fresh-water fishes from Idaho, Nevada, California, and Arizona; and about 1,200 fishes from the Texas coast.

Several large lots of insects were received: About 22,000 miscellaneous specimens, mostly Lepidoptera, brought together by the late Elison A. Smyth, of Salem, Va.; 5,000 Far Eastern butterflies; 500 South American chalcid wasps, mostly type material; 1,500 miscellaneous insects from Liberia; an equal number from Guatemala; 4,500 from Alaska; and 77,000 transferred from the United States Bureau of Entomology and Plant Quarantine.

Much scientifically valuable material was received in the division of marine invertebrates. To the type collection of Foraminifera 836 slides were added, bringing the total now to nearly 11,500 slides. Nearly 5,000 lots of fresh-water copepods, branchiopods, ostracods, amphipods, and mysids were donated by the widow of the late S. F. Light in his memory. Similarly, Mrs. Nathaniel Gist Gee gave about 1,250 lots of fresh-water sponges. The Bikini Scientific Resurvey, of the Navy, yielded over 1,600 marine invertebrates for the Museum;

about 8,800 Pacific invertebrates came from the Naval Medical Research Unit No. 2; and about 6,000 from the Navy's Second (1948) Antarctic Development Project.

Outstanding among the year's molluscan accessions were 3,000 specimens from Cocos-Keeling Island; 9,000 from Bikini, Rongerik, and Johnston Islands, collected by members of the staff during the Bikini Scientific Resurvey; a large number from various other Pacific islands; and about 1,500 Antarctic marine mollusks. The Navy Antarctic Expedition yielded also about 500 echinoderms.

Botany.—Several unusually large plant accessions came to the National Herbarium. Among these was the bequest of 5,000 specimens of fungi, the herbarium of the late William H. Long, of Albuquerque, N. Mex. H. A. Allard collected 9,100 plants for the Museum in the Dominican Republic. An unusually interesting lot of Colombian plants came from the collector Oscar L. Haught, and collecting work of E. C. Leonard, a member of the staff, yielded 1,900 bryophytes from the Patuxent Wildlife Research Refuge, Maryland. In addition, many hundreds of desirable plant specimens and photographs were obtained by exchange or purchase.

Geology.—The general mineralogical collections continued to grow through gifts, exchanges, and purchases, and as usual the year's accessions in this field included several new species of minerals. The outstanding addition to the gem series was an Arabian stallion head carved in turquoise by Oscar J. W. Hansen. Five meteorites not previously represented in the department's collections were received by gift, and excellent additions to the ore collections came from many sources. Rock specimens received contained important described material.

Many important specimens of fossil invertebrates came to the Museum as gifts, four of the larger lots being 2,000 Ordovician fossils from Minnesota; 1,700 Mesozoic and Tertiary fossils from Cuba; 15,000 Devonian and Upper Paleozoic fossils from Nevada; and 1,700 Jurassic brachiopods and mollusks from the vicinity of the Smithsonian's Astrophysical Observatory station at Calama, Chile, collected by Miss Jessie G. Beach, of the department staff, while on vacation. Through the Walcott funds there were received 900 specimens of various invertebrates from the famous Permian deposits of Sosio Valley, Sicily; 2,500 from the Devonian of Ontario; 50,000 Paleozoic fossils collected by Dr. A. R. Loeblich, Jr., of the staff; and 15,000 Middle-Upper Paleozoic and Cretaceous fossils collected by Curator G. A. Cooper and Elias Yochelson. Several large transfers of specimens came from the United States Geological Survey.

This was a banner year for the division of vertebrate paleontology, the greatest number of specimens being added to the collections since the field season of 1931. The outstanding acquisition was the skull, jaws, and a foot of the tillodont *Trogosus castoridens* from the Bridger formation near Church Buttes, Wyo., the second skull of this rare mammal to be found during intermittent exploration covering 75 years. Equally significant was the discovery of the rostral portion of the skull of *Esthonyx acutidens*, an earlier member of the tillodont order from the Wind River beds of Wyoming. This specimen, found by H. A. Tourtelot, was transferred from the United States Geological Survey. Exceptionally valuable for exhibition purposes was the large slab of giant amphibian skulls and other skeletal parts representing the Triassic form *Buettneria perfecta*, secured by the associate curator's party near Lamy, N. Mex. Other specimens that came as a result of the division's field work were two well-preserved skulls of the Eocene primate *Notharctus;* additional specimens of *Trogosus*, of the rhino *Hyrachyus*, and the tapir *Helaletes;* and skulls of the small rodents *Mysops* and *Sciuravas.* Jurassic fishes collected by the associate curator represent some of the earliest bony fishes and are important in providing unusual specimens for growth studies.

Engineering and industries.—An outstanding accession in the division of engineering was the collection of railroad historical material assembled by the late Charles B. Chaney, Jr., totaling about 20,000 items. Another railroad accession was a group of models showing the evolution of the equipment of The Empire State Express, the New York Central famous train. Various commercial firms continued their cooperation by contributing material relating to industrial products and manufactures, and interesting electrical items came from a number of sources. Through the Dahlgreen fund 15 fine original prints of historical and technical importance were added to the graphic arts collections; included in the group are prints by Breughel, Goya, Delacroix, Blake, Daumier, Rodin, and Zorn. Among the photographic material received was equipment used in the first practical synchronization of sound in motion pictures. An interesting accession in the division of medicine and public health was one of the first of the so-called "drunkometer" instruments now used extensively by police departments to determine the amount of alcohol in the breath and tissues.

History.—A notable acquisition in this division was a large numismatic and philatelic collection from the estate of the late Victor L. Huberich, consisting of more than 2,500 specimens of United States, Canadian, and Japanese paper money and about 73,000 Mexican revenue stamps and Japanese postage stamps. This is a collection of unusual historical interest and is the first important addition to the Museum's collection of United States paper currency in many years. The numismatic series were increased also by the addition of 72 commemorative medals lent by the Bureau of the Mint. The most important addition to the costumes collection was a green silk, flowered, brocade wedding dress, worn by Sarah Pierpont who married Jonathan Edwards in 1727. The military and naval collections were enhanced by a number of interesting objects, one lot of special importance being a collection of 72 Teacher Type ship models of the sort used by the Navy for training during World War II and 10 wooden display cases for them.

EXPLORATION AND FIELD WORK

Field work by members of the staff of the departments of anthropology, zoology, botany, and geology was continued during the year as opportunities offered.

In January four Museum staff members—Frank M. Setzler, head curator of anthropology, and biologists David H. Johnson, Herbert G. Deignan, and Robert R. Miller—left for Australia to participate in an anthropological and biological survey of little-known Arnhem Land sponsored by the Smithsonian Institution, the Australian Commonwealth, and the National Geographic Society. This expedition was still in the field at the close of the fiscal year, but had already reported good progress in its studies and collections.

Early in the year the associate curator of ethnology, John C. Ewers, spent nearly 3 months on the Blackfeet Reservation in Montana and the Blood Reserve in Alberta interviewing aged Indians on traditional arts and crafts and on the role of the horse in Blackfoot culture. Briefer periods were spent on the Flathead Reservation in Montana and the Pine Ridge Reservation in South Dakota obtaining comparative materials on Flathead and Oglala Sioux horse culture.

Dr. Waldo R. Wedel, associate curator of archeology, was detailed during most of the year to the River Basin Surveys under the Bureau of American Ethnology and spent considerable time in the field, particularly in the Missouri River Basin. (See appendix 5 for details.)

The Smithsonian took part in the Navy's Second (1948) Antarctic Development Project, and Commander David C. Nutt was employed as biologist on a temporary basis to represent the Museum. The result was the collecting of one of the best representations of Antarctic marine life, particularly invertebrates, ever to accrue to the national collections. Charles O. Handley, Jr., likewise temporarily employed, accompanied a naval expedition to the American Arctic Archipelago, where he secured a fine lot of Arctic birds and mammals for the Museum.

During the first 2 months of the year Dr. Leonard P. Schultz, curator of fishes, Dr. J. P. E. Morrison, associate curator of mollusks, and Frederick M. Bayer, assistant curator of marine invertebrates, participated in the Bikini Scientific Resurvey organized by the Department of the Navy, the United States Armed Forces Special Weapons Project, and the Atomic Energy Commission. This investigation was made for the purpose of determining the possible long-range effects of the Operation Crossroads atom-bomb experiments on the animal and plant life of the area. Extensive collections were made, with emphasis on fishes and marine invertebrates.

Donald S. Erdman, biological aid in the division of fishes, left on March 21 to make a survey of the fishery resources of the Persian Gulf.

Other zoological field projects participated in by the Museum included the following: A survey of the small mammals of eastern Pennsylvania and their ectoparasites, sponsored by the United States Public Health Service; a similar survey at Air Transport Command bases in Greenland, Labrador, Newfoundland, Quebec, and Maine, in cooperation with the Army Medical Center; two ornithological expeditions financed by the W. L. Abbott fund, one in Colombia and one in Panamá; alcyonarian studies in southern Florida; a survey of Lithia Spring, Fla., following the reported occurrence there of an Asiatic snail known as the intermediate host of the disease paragonimiasis of the western Pacific.

No formal expeditions were participated in by the department of botany during the year, but various members of the staff did collecting work in eastern Canada, Maryland, and southern Oregon and northern California. Dr. F. A. McClure, research associate, was in Central America from December to June, continuing field studies of American bamboos.

In the department of geology, field work again yielded interesting and needed study specimens of fossils. Dr. G. A. Cooper, curator of invertebrate paleontology, and party collected Devonian and Mississippian fossils in the region of Alamogordo, the San Andres Mountains, and Silver City, N. Mex., and later Permian fossils in the Glass Mountains, Tex., and Lower and Middle Ordovician material in the Arbuckle Mountains and Criner Hills, Okla. Associate Curator A. R. Loeblich's field work took him to western New York and Ontario, where he collected from Middle Devonian deposits; to Sylvania, Ohio, where he obtained more Devonian invertebrate fossils; to Illinois (Pennsylvanian rocks) and eastern Missouri (Silurian); and to Tennessee, where he collected Ordovician and Silurian fossils in the Central Basin and also visited important Silurian and Devonian localities in the western part of the State.

Dr. C. Lewis Gazin, curator of vertebrate paleontology, resumed his program of mammalian collecting in the Middle Eocene Bridger formation, Wyoming, and obtained outstanding primate, creodont, insectivore, perissodactyl, and rodent material, as well as some good reptile skulls.

Under the leadership of Dr. David H. Dunkle, associate curator of vertebrate paleontology, a field party spent several weeks at a Triassic rock quarry near Lemy, N. Mex., recovering 19 blocks of the bone-bed material. Composed primarily of the dissociated remains of the giant stereopondylous amphibian *Buettneria*, the collection includes at least 35 skulls of this animal, as well as a multitude of other skeletal parts. Dr. Dunkle also made a search for fossil fishes in the Jurassic beds east of Santa Rosa, N. Mex., and his party obtained 87 specimens representing two genera of primative teleosts. Prior to the close of the year Dr. Dunkle and A. C. Murray undertook field work in the marine Pierre Shale north of Lusk, eastern Wyoming.

PUBLICATIONS

Twenty-four Museum publications were issued during the year: 1 Annual Report, 4 Bulletins, 17 Proceedings papers, and 2 papers in the Bulletin series, Contributions from the United States National Herbarium. A list of these is given in the complete report on Smithsonian publications, appendix 12. Special mention should be made of Bulletin 193, published in December 1947, comprising a list and index of all the publications of the United States National Museum from 1875, when the first Museum Bulletin was issued, until the end of 1946. It is the first such list and index to be published in more than 40 years. It was compiled in the editorial division.

The distribution of volumes and separates to libraries and other institutions and to individuals aggregated 50,970.

CHANGES IN ORGANIZATION

A number of important changes in the Museum organization were effected during the year.

On July 31, 1947, the department of biology was divided into two departments—zoology and botany—the former division of plants (the National Herbarium) being raised to the status of a full department. Ellsworth P. Killip was named head curator of the department of botany, while Dr. Waldo L. Schmitt continued as head curator of zoology. Three divisions were created in the new department—phanerogams, grasses, and cryptogams—and toward the close of the year a fourth one, the division of ferns, was established, to become effective on July 1, 1948.

The division of aeronautics was separated from the department of engineering and industries on July 31, 1947, to become the nucleus of the National Air Museum, established by Congress in 1946 as a bureau of the Smithsonian Institution. This change took from the department Paul E. Garber, curator of aeronautics, with 28 years of service in the Museum, to become curator of the National Air Museum.

On March 7, 1948, Carl W. Mitman, head curator of the department of engineering and industries since 1932, left the staff of the National Museum to become Assistant to the Secretary for the National Air Museum. Frank A. Taylor, curator of engineering, was appointed head curator of the department on May 3, 1948.

During the year Dr. Alexander Wetmore, who since 1945 had been serving in the double capacity as Secretary of the Smithsonian Institution and also as Director of the National Museum, relinquished the latter position. Dr. Wetmore had been in charge of the Museum since 1925. On May 26, 1948, Dr. Remington Kellogg, curator of the division of mammals, was appointed as the new Director.

Respectfully submitted.

Remington Kellogg, *Director.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

APPENDIX 2

REPORT ON THE NATIONAL GALLERY OF ART

Sir: I have the honor to submit, on behalf of the Board of Trustees, the eleventh annual report of the National Gallery of Art, for the fiscal year ended June 30, 1948. This report is made pursuant to the provisions of section 5 (d) of Public Resolution No. 14, Seventy-fifth Congress, first session, approved March 24, 1937 (50 Stat. 51).

ORGANIZATION

The statutory members of the Board of Trustees of the National Gallery of Art are the Chief Justice of the United States, the Secretary of State, the Secretary of the Treasury, and the Secretary of the Smithsonian Institution, ex officio. The five general trustees continuing in office during the fiscal year ended June 30, 1948, were Samuel H. Kress, Ferdinand Lammot Belin, Duncan Phillips, Chester Dale, and Paul Mellon. The Board of Trustees held its annual meeting on May 4, 1948. Samuel H. Kress was reelected President and Ferdinand Lammot Belin Vice President, to serve for the ensuing year. Donald D. Shepard continued to serve during the year as Advisor to the Board.

All the executive officers of the Gallery continued in office during the year:

Huntington Cairns, Secretary-Treasurer.
David E. Finley, Director.
Harry A. McBride, Administrator.
Huntington Cairns, General Counsel.
John Walker, Chief Curator.
Macgill James, Assistant Director.

The three standing committees of the Board, as constituted at the annual meeting May 4, 1948, were as follows:

Executive Committee

Chief Justice of the United States, ex officio, Fred M. Vinson, Chairman.
Samuel H. Kress, Vice Chairman.
Ferdinand Lammot Belin.
Secretary of the Smithsonian Institution, Dr. Alexander Wetmore.
Paul Mellon.

Finance Committee

Secretary of the Treasury, ex officio, John W. Snyder, Chairman.
Samuel H. Kress, Vice Chairman.

Ferdinand Lammot Belin.
Chester Dale.
Paul Mellon.

ACQUISITIONS COMMITTEE

Samuel H. Kress, Chairman.
Ferdinand Lammot Belin, Vice Chairman.
Duncan Phillips.
Chester Dale.
David E. Finley, ex officio.

Lamont Moore, curator in charge of education, resigned on August 31, 1947, to accept the position of Assistant Director of the American Academy in Rome. On March 25, 1948, Dr. Raymond S. Stites was appointed curator in charge of education.

On June 30, 1948, the Government employees on the staff of the National Gallery of Art totaled 312, as compared with 305 employees as of June 30, 1947. The United States Civil Service regulations govern the appointment of employees paid from appropriated public funds.

Throughout the year a high standard of operation has been maintained in all departments of the Gallery. The entire staff was especially commended by the Board of Trustees for outstanding service during the exhibition of paintings from the Berlin museums, which brought unprecedented numbers of visitors to the Gallery.

APPROPRIATIONS

For the fiscal year ended June 30, 1948, the Congress of the United States appropriated for the National Gallery of Art the sum of $949,426 to be used for salaries and expenses in the operation and upkeep of the Gallery, the protection and care of works of art, and administrative and other expenses.

From this appropriation the following expenditures and encumbrances were incurred:

Personal services	$816,880.00
Printing and binding	6,181.46
Supplies, equipment, etc	126,319.16
Unencumbered balance	45.38
Total	949,426.00

In addition to this appropriation, the Gallery received from the Department of State the sum of $5,800 to cover expenses during the fiscal year of the Inter-American Office, in closing out the Gallery's participation in the program of exchange of art and art materials between the United States and other American republics. Of this sum, $5,327.06 was expended, primarily in the circulation of eight exhibitions and the subsequent return of loaned objects. The unobligated balance was $472.94.

ATTENDANCE

There were 2,159,435 visitors to the Gallery during the fiscal year, an average daily attendance of about 5,932. This was an increase of 711,397 over the total of 1,448,038 visitors in the previous fiscal year. During the period between March 17, 1948, and April 25, 1948, when the paintings from the Berlin museums were on exhibition, a total of 964,970 people visited the Gallery. On one day, April 11, 1948, the Gallery attendance set an all-time high of 67,490.

ACCESSIONS

There were 1,360 accessions by the National Gallery of Art, as gifts, loans or deposits, during the fiscal year. Most of the paintings and a number of the prints were placed on exhibition.

PAINTINGS

A special opening was held February 1, 1948, to exhibit recent additions to the Ralph and Mary Booth Collection, consisting of eight paintings by Italian and German artists of the fifteenth and sixteenth centuries. These paintings were presented to the Gallery by Mrs. Ralph Harman Booth, of Detroit, and their acceptance was confirmed by the Board of Trustees on October 13, 1947. Also exhibited at the same time were previous donations to the same collection. A special catalog was prepared for the opening. The paintings received were:

Artist	*Title*
Boltraffio	Portrait of a Youth.
Bellini	Madonna and Child.
Tintoretto	Madonna of the Stars.
Cranach, Lucas, the Elder	A Prince of Saxony.
Cranach, Lucas, the Elder	A Princess of Saxony.
Strigel	The Mayor of Memmingen.
Strigel	The Wife of the Mayor of Memmingen.
Kremer	Portrait of a Nobleman.

The A. W. Mellon Educational and Charitable Trust presented to the Gallery 113 portraits, which were accepted by the Board on December 22, 1947. The gift contains a provision for the transfer of portraits, in certain circumstances, to a National Portrait Gallery, when and if established. The paintings are as follows:

Artist	*Title*
John Hesselius	Thomas Johnson.
Rembrandt Peale	George Washington (after Pine).
Douglas Volk	Abraham Lincoln.
John James Audubon (?)	Portrait of a Girl.
Asher B. Durand	Gouverneur Kemble.
Jacob Eichholtz	William Clark Frazer.
Jacob Eichholtz	James P. Smith.
Charles Loring Elliott	Self-Portrait.

Artist	*Title*
Charles Loring Elliott	William S. Mount.
Daniel Huntington	Henry Theodore Tuckerman.
Henry Inman	George Pope Morris.
William S. Mount	Charles Loring Elliott.
Charles Willson Peale	Timothy Matlack.
Thomas Sully	Robert Walsh.
Jeremiah Theus	Isaac Motte.
John Trumbull	William Rogers.
John Vanderlyn	John Sudam.
Francis Alexander	Sarah Blake Sturgis.
Washington Allston	Stuart's Family.
Ezra Ames	Maria Gansevoort Melville.
Joseph A. Ames	George Southward.
Joseph Badger	Judge Robert Auchmuty, Sr.
Henry Benbridge	Oliver de Lancey.
Joseph Blackburn	General Joshua Winslow.
Charles Bridges	William Gooch.
Charles Bridges	Anne Brown Hamilton.
Mather Brown	Thomas Dawson.
Mather Brown	Alexander Hamilton.
Alvan Clark	Barnabus Clark.
James Claypoole	Margaret Hamilton Allen.
John Singleton Copley	Jeremiah Taylor.
Henri Couturier	Frederick Philipse.
Henri Couturier	Oloff Stevense van Cortlandt.
Abraham Delanoy	Peter R. Livingston.
William Dunlap	John Howard Payne.
Asher Brown Durand	Christian Gobrecht.
Evert Duyckinck, 1st	Stephanus van Cortlandt.
Evert Duyckinck, 3rd	Ann Sinclair Crommelin.
Gerardus Duyckinck	James de Lancey.
Gerret Duyckinck	Anne van Cortlandt.
Ralph E. W. Earl	Thomas Earl.
Ralph E. W. Earl	Samuel Stanhope Smith.
Jacob Eichholtz	Mrs. Phoebe Freeman.
Nathaniel Emmons	Jonathan Belcher.
Robert Feke	Ruth Cunningham.
Robert Feke	Foster Hutchinson.
James Frothingham	Ebenezer Newhall.
Robert Fulton	Mahlon Dickerson.
Robert Fulton	Henry Eckford.
Robert Fulton	Marion (Bedell) Eckford and Henrietta Eckford.
Chester Harding	Chester Harding.
James Herring	William Augustus Conway.
Daniel Huntington	James Hall.
Daniel Huntington	John Edwards Holbrook.
Henry Inman	Clara Barton.
Henry Inman	Charles Fenno Hoffman.
Henry Inman	Mrs. Elizabeth Oakes Smith.
John Wesley Jarvis	James Lawrence.
David Johnson	Edwin Forrest.
Eastman Johnson	Joseph Wesley Harper.

Artist	*Title*
Henrietta Johnston	Robert Johnson.
John Johnston	John Peck.
Charles Bird King	Grace Greenwood.
Thomas B. Lawson	William Morris Hunt.
Edward G. Malbone	Margaret Maria Livingston.
Edward D. Marchant	Charles Fenno Hoffman.
John Mare	Robert Monckton.
Eliab Metcalfe	Alexander Anderson.
Samuel F. B. Morse	Coralie Livingston Barton.
Samuel F. B. Morse	Katherine Augusta Rhodes Ware.
John Neagle	John Davis.
John Neagle	Mrs. John Dickson.
John Neagle	Thomas W. Dyott.
John Neagle	Ann C. Rudman.
John Neagle	William C. Rudman.
John Neagle	John Albert Ryan.
John Neagle	Miss Ryan.
James Peale	General Mordecai Gist.
Rembrandt Peale	Peter B. Porter.
Rembrandt Peale	Richardson Stuart.
Peter Pelham	Jonathan Law.
Peter Pelham	John Smibert.
Robert Edge Pine	General William Smallwood.
Matthew Pratt	John Cochran.
William Read	Richard Bellingham.
John Smibert	Stephen de Lancey.
John Smibert	Alexander Garden.
John Smibert	Governor William Shirley.
John Smibert	Susannah de Lancey Warren.
F. R. Spencer	Frances Ludlum Morris.
Junius Brutus Stearns	Charles Gamage Eastman.
J. G. Strycker	Jan Strycker.
J. G. Strycker	Adrian van der Donck.
Gilbert Stuart	Sir Francis N. P. Conyngham.
Gilbert Stuart	Cyrus Griffin.
Gilbert Stuart	James Lloyd.
Gilbert Stuart	Mrs. Andrew Dexter.
Thomas Sully	Thomas Alston.
Thomas Sully	Dr. William Gibson.
Thomas Sully	Julianna Hazelhurst.
Thomas Sully	John Philip Kemble (after Stuart).
Jeremiah Theus	Josias Allston.
Jeremiah Theus	Johann deKalb.
Edward Truman	Jonathan Sewell.
John Vanderlyn	Miss Robinson.
Pieter Vanderlyn	Johannes van Vechten.
John Watson	Sir Peter Warren.
Adolph U. Wertmüller	Philip van Cortlandt.
Benjamin West	Elizabeth Beckford.
Benjamin West	Elizabeth Gordon.
John Wollaston	Captain Archibald Kennedy.
John Wollaston	John Stevens.
James R. Lambdin	Abraham Lincoln.

Cornelius Vanderbilt Whitney's gift of a Van Dyck portrait of Henri II de Lorraine, Duc de Guise, was accepted on the same date.

Three paintings given by William C. Freeman were accepted by the Board of Trustees on October 13, 1947. One was a group portrait, "The Coleman Sisters, Isabel, Sarah, and Margaret," by Thomas Sully. The others were portraits of Mr. and Mrs. Robert Coleman, by Rembrandt Peale. At the same time a painting given by Stephen C. Clark, entitled "Hound and Hunter," by Winslow Homer, was accepted. On December 22, 1947, the Board accepted from Mrs. Gordon Dexter an oil sketch entitled "The Death of Lord Chatham," by John Singleton Copley. A portrait of George Washington, by Charles Peale Polk, was accepted from William C. Freeman on the same date, to be held for a National Portrait Gallery. On March 1, 1948, the Board of Trustees accepted from Mrs. Henry R. Rea a portrait, attributed to the English School, of the Earl of Essex, and from Mrs. Augustus Vincent Tack a portrait of her mother, Mrs. George Fuller, by George Fuller. On June 16, 1948, the Board accepted from Oscar Doyle Johnson a painting entitled "Catherine," by Robert Henri.

PRINTS AND DRAWINGS

A gift from Lessing J. Rosenwald of 199 additional prints and drawings was accepted on October 13, 1947, to be added to the Lessing J. Rosenwald Collection. At the same time, six prints and drawings were accepted from Myron A. Hofer. On May 4, 1948, the Board accepted from Mrs. Josephine Bradlee, Mrs. Percy D. Morgan, and Caspar C. de Gersdorff a total of 270 prints and drawings by Segonzac, and 42 illustrated books, given in memory of the late Frank Crowninshield.

During the year the Board accepted from Chester Dale a drawing and an etching, two prints from David Keppel, and a woodcut from an anonymous donor. The offer of Lessing J. Rosenwald to exchange an engraving by Aldegrever for a better impression was also accepted.

SCULPTURE

On October 13, 1947, the Board accepted from Eames MacVeagh a bronze portrait medallion of Wayne MacVeagh, by Augustus Saint-Gaudens, to be held for a National Portrait Gallery.

WORKS OF ART ON LOAN

During the fiscal year 1948 the following works of art were received on loan by the National Gallery of Art:

From	*Artist*
Anonymous loan:	
Paradise Valley	John La Farge.
Mrs. Charles Carstairs, Paris, France:	
Colonel Pocklington and His Sisters	George Stubbs.

From	*Artist*
Richard W. Norton, Shreveport, La.:	
Result of the Election	George Caleb Bingham.
George Matthew Adams, New York, N. Y.:	
Memory Copy of Holbein's Erasmus	Alphonse Legros.
244 prints	Alphonse Legros.
Robert Woods Bliss, Washington, D. C.:	
30 objects of Pre-Columbian Art.	

LOANED WORKS OF ART RETURNED

The following works of art on loan were returned during the fiscal year 1948:

To	*Artist*
Mme. Charlotte Fuerstenberg, New York, N. Y.:	
Walk at Chantilly	Cezanne.
The Skating Rink	Manet.
Albert Wolfe	Manet.
Reinhold Hans Cassirer, New York, N. Y.:	
At the Piano	Renoir.
Mrs. Huttleston Rogers, New York, N. Y.:	
The Tricycle	Monet.
Sarah Bernhardt as Fedora	Stevens.
The J. H. Whittemore Company, Naugatuck, Conn.:	
Behind the Scenes—Ballet Girls	Degas.
Still Life—Apples and Sugar Bowl	Renoir.
Landscape	Ryder.
Flower Shop, Dieppe	Whistler.
Street at Bourges	Whistler.
Venice—The Doorway	Whistler.
The Dancers	Degas.
Two Studies of Mary Cassatt at the Louvre	Degas.
Ballet Dancer Fixing Her Slipper	Degas.
Ballet Dancer Leaning Forward	Degas.
Nude Figure Leaning Forward and Holding Right Foot	Degas.
Islets on the Seine at Port Villers, 1883	Monet.
The Sea	Whistler.
James Hazen Hyde, New York, N. Y.:	
4 tapestries.	
Chester Dale, New York, N. Y.:	
24 prints	Various.

WORKS OF ART LOANED

During the fiscal year 1948, the Gallery loaned the following works of art for exhibition purposes:

To	*Artist*
The Virginia Museum of Fine Arts, Richmond, Va.:	
Benjamin Harrison	Charles Willson Peale.
The Saginaw Museum, Saginaw, Mich.:	
John Randolph	Gilbert Stuart.
The Denver Art Museum, Denver, Colo.:	
Alexander Hamilton	John Trumbull.
The United States Supreme Court, Washington, D. C.:	
Thomas Johnson (?)	John Hesselius (?).

To	*Artist*
The White House, Washington, D. C.:	
George Washington	Rembrandt Peale (after Pine).
Franklin Pierce	G. P. A. Healy.
James Monroe	John Vanderlyn.
The Whitney Museum of American Art, New York, N. Y.:	
Siegfried and the Rhine Maidens	Albert P. Ryder.

EXHIBITIONS

The following exhibitions were held at the National Gallery of Art during the fiscal year ended June 30, 1948:

Chiaroscuro Woodcuts from the Sixteenth through the Eighteenth Centuries. Loaned anonymously. Continued from previous fiscal year. June 8 to November 16, 1947.

Etchings of James McNeill Whistler. Exhibition from the gift of Mr. and Mrs. J. Watson Webb, New York, N. Y. Continued from previous fiscal year. June 13 to October 24, 1947.

Prints by Henri de Toulouse-Lautrec. Exhibition of prints from the Rosenwald Collection. October 25, 1947, to April 4, 1948.

Men of Action of the Naval Services, World War II. A group of war portraits of personnel of the naval services, for eventual installation in the proposed National Museum of Military and Naval History. November 23 to December 14, 1947.

The Art of France in Prints and Books. Exhibition of prints and books from the Rosenwald and Widener Collections; also books from the Rosenwald Collection in the Library of Congress. December 12, 1947, to March 4, 1948.

Paintings from the Berlin Museums. Exhibition of paintings brought to this country for safekeeping by the Department of the Army and stored at the National Gallery of Art. Exhibited at the request of the Department of the Army. March 17 to April 25, 1948.

Prints by James McNeill Whistler. Exhibition of prints from the Rosenwald Collection; one print from the Hofer Collection. Opened April 6, 1948.

American Paintings from the Collection of the National Gallery of Art. Exhibition of American paintings, featuring a group of portraits from Pocahontas to General Eisenhower. Opened May 23, 1948.

Indigenous Art of the Americas, from the Robert Woods Bliss Collection. Continued from the previous year with rearrangements and additions made by Mr. Bliss this year. Reopened with changes, May 23, 1948.

TRAVELING EXHIBITIONS

Rosenwald Collection.—During the fiscal year 1948 special exhibitions of prints from the Rosenwald Collection were circulated to the following:

Los Angeles County Museum, Los Angeles, Calif.:
  Rembrandt Exhibition, 50 etchings, 5 drawings.
    November 18 to December 31, 1947.
Grand Rapids Art Gallery, Grand Rapids, Mich.:
  Six Centuries of Prints, 80 prints.
    December, 1947.

The Art Alliance, Philadelphia, Pa.:
Contemporary Print Making in France, 8 prints.
February 2 to March 1, 1948.
Philadelphia Museum of Art, Philadelphia, Pa.:
Collector's Choice, 5 prints.
February 7 to March 14, 1948.
J. B. Speed Museum, Louisville, Ky.:
"Great Passion" Woodcuts, 21 Dürer woodcuts.
March 6 to March 28, 1948.
Worcester Art Museum, Worcester, Mass.:
50th Anniversary Exhibition, 22 prints.
April 7 to May 15, 1948.

Index of American Design.—Exhibitions from this collection were shown during the fiscal year 1948 at the following places: Ohio State Museum, Columbus, Ohio; N. W. Ayer Gallery, Philadelphia, Pa.; Library of Congress, Washington, D. C.; M. H. De Young Memorial Museum, San Francisco, Calif.; Pomona College, Claremont, Calif.; Santa Barbara Museum of Art, Santa Barbara, Calif.; Los Angeles Public Library, Los Angeles, Calif.; Pasadena Art Institute, Pasadena, Calif.; Pfeiffer College, Misenheimer, N. C.; Schenectady Museum, Schenectady, N. Y.; Long Beach Art Association, Long Beach, Calif.; Children's Museum, Denver Art Museum, Denver, Colo.; Honolulu Academy of Art, Honolulu, Hawaii; Winter Industries Cooperative, Northeast Harbor, Me.; Children's Museum, Irvington-on-Hudson, N. Y.; West Virginia Institute of Technology, Montgomery, W. Va.; San Joaquin Pioneer Museum, Stockton, Calif.; Western Reserve Historical Society, Cleveland, Ohio; Jewish Community Center, Washington, D. C.; Smithfield High School, Smithfield, Va.; Norfolk Museum of Arts and Sciences, Norfolk, Va.; University of Oregon, Eugene, Oreg.; Albion College, Albion, Mich.; Washington County Museum of Fine Arts, Hagerstown, Md.; Joslyn Memorial Art Gallery, Omaha, Nebr.; New York State Historical Association, Cooperstown, N. Y.; Shaker Work Camp, Mt. Lebanon, N. Y.

PAINTINGS FROM THE BERLIN MUSEUMS

On March 6, 1948, it was announced that the National Gallery of Art, at the request of the Department of the Army, would place on exhibition from March 17 to April 18, 1948, the 202 paintings from the Berlin museums which were brought to the United States in 1945 for safekeeping, and which had been stored since that time in the National Gallery of Art. Shown during the Gallery's regular exhibition hours, the paintings attracted widespread public interest, and were viewed by such large numbers of visitors that new attendance records were established. The exhibition was extended for one week to April 25, and the total attendance reached an all-time high of 964,970 visitors, which is believed to be a record for any museum or art gallery in the world in a comparable period. Following the close of the exhibition, the custody of the paintings passed from the National Gallery of Art to the Department of the Army.

In accordance with the expressed wishes of the Senate Armed Services Committee and the Department of the Army, a meeting of museum and gallery officials was held at the National Gallery of Art on April 29, 1948, to prepare plans for an exhibition tour of certain of these paintings. Attending the meeting were: David E. Finley, Director, National Gallery of Art, presiding; G. H. Edgell, Director, Museum of Fine Arts, Boston, Mass.; H. F. Jayne, Vice Director, and Dudley T. Easby, Secretary, Metropolitan Museum of Art, New York, N. Y.; Fiske Kimball, Director, Philadelphia Museum of Art, Philadelphia, Pa.; Homer Saint-Gaudens, Director, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.; Daniel Catton Rich, Director, Art Institute of Chicago, Chicago, Ill.; William M. Milliken, Director, Cleveland Museum of Art, Cleveland, O.; Edgar P. Richardson, Director, Detroit Institute of Arts, Detroit, Mich.; Edward S. King, Acting Administrator, and David Rosen, Technical Advisor for Preservation and Restoration, Walters Gallery, Baltimore, Md.; Blake-More Godwin, Director, Toledo Museum of Art, Toledo, O.; Russell A. Plimpton, Director, Minneapolis Institute of Arts, Minneapolis, Minn.; James W. Foster, Jr., Baltimore Museum of Art, Baltimore, Md.; also present were: Col. T. Scott Riggs and Maj. Gerard B. Crook, General Staff Corps, Civil Affairs Division, United States Army, and Abraham J. Harris, Department of Justice.

At this meeting a proposed schedule of exhibitions throughout the United States was agreed upon, and subsequently confirmed with amendments by the Department of the Army.

In conformity with instructions from the Department of the Army, 52 of the paintings which were considered most likely to suffer damage or deterioration if sent on an exhibition tour were packed for immediate shipment back to the American Zone in Germany. These paintings were chosen by the following committee, which met at the National Gallery of Art on April 27, 1948: John Walker, Chairman, Chief Curator, National Gallery of Art; Daniel Catton Rich, Director of the Chicago Art Institute; George Stout, Director of the Worcester Art Museum; Stephen S. Pichetto, Consultant Restorer to the National Gallery of Art and to the Metropolitan Museum of Art; and Dr. Irene Kuehnel, formerly Curator of Paintings of the Kaiser Friedrich Museum and currently attached to Military Government in the American Zone, Germany.

The remainder of the paintings were packed and sent on tour in accordance with plans approved by the Department of the Army. At the Department's request, the National Gallery of Art agreed to supervise technical and professional details involved in sending the paintings on an exhibition tour. The following institutions were scheduled to participate in the tour:

Metropolitan Museum of Art, New York, N. Y.
Philadelphia Museum of Art, Philadelphia, Pa.
Art Institute of Chicago, Chicago, Ill.
Museum of Fine Arts, Boston, Mass.
Detroit Institute of Arts, Detroit, Mich.
Cleveland Museum of Art, Cleveland, Ohio.
Minneapolis Institute of Arts, Minneapolis, Minn.
M. H. De Young Memorial Museum, San Francisco, Calif.
Los Angeles County Museum of History, Science and Art, Los Angeles, Calif.
City Art Museum of St. Louis, St. Louis, Mo.
Carnegie Institute, Pittsburgh, Pa.
Toledo Museum of Art, Toledo, Ohio.

CURATORIAL ACTIVITIES

The Curatorial Department accessioned 1,360 new gifts to the Gallery during the year. Advice was given in the case of 205 works of art brought to the Gallery for opinion, and 21 visits were made in connection with proffered works of art. More than 500 research problems were investigated in response to inquiries received by the Gallery. During the year 16 lectures and 4 lecture courses were given by members of the curatorial staff. Charles Seymour, Jr., gave a series of lectures on Renaissance art at the Johns Hopkins University, and carried on special research in Europe in connection with the Gallery's sculpture collection.

Changes were made in the installation of the Bliss Collection of Pre-Columbian Art, to accommodate additional art objects loaned to the Gallery by Robert Woods Bliss. The cataloging and filing of photographs in the George Martin Richter Archive is continuing, with the gradual enlargement of the collection.

Further activities of the department are indicated under the heading of "Publications."

RESTORATION AND REPAIR OF WORKS OF ART

Necessary restoration and repair of works of art in the Gallery's collections were made by Stephen S. Pichetto, Consultant Restorer to the Gallery. All work was completed in the Restorer's studio in the Gallery, with the exception of the restoration of one painting, work on which was completed in Mr. Pichetto's New York studio.

PUBLICATIONS

During the year an article by Mr. Cairns, "The Future of Musical Patronage," was contributed to a symposium, "Music and Criticism," edited by Richard F. French, published by Harvard University Press, Cambridge, Mass. It also appeared in the Atlantic Monthly. A lecture by Mr. Cairns at the University of Mexico was published by the University of Mexico, and a Spanish translation of an article by Mr. Cairns on "Leibniz' Theory of Law" appeared in an Argentine legal review. Mr. Cairns also edited with an introduction a volume entitled "Lectures in Criticism," to be published in the early fall. His review of Randolph E. Paul's "Taxation for Prosperity" was published in Tax Law Review.

A series of 12 articles on French paintings in the Gallery, prefaced by one entitled "Connoisseurship and Nineteenth-Century French Painting," was published by John Walker in the Ladies' Home Journal. Charles Seymour, Jr., published an article on "XIII Century Sculpture at Noyon" and another entitled "Houdon's Washington at Mount Vernon Reexamined" in the Gazette des Beaux-Arts. Fern Rusk Shapley contributed to the Gazette des Beaux-Arts. Articles and book reviews by James W. Lane appeared in the Gazette des Beaux-Arts, The College Art Journal, Art in America, The American Collector, Antiques, The Catholic World, and Commonweal. Charles M. Richards contributed an article on measurements to Museum News. "A Study of a Painting Done by a Mental Patient," by Erwin O. Christensen, was published in "Case Studies in the Psychopathology of Crime."

A book of illustrations on the painting and sculpture in the Widener Collection was issued during the year. Members of the curatorial staff prepared a check list of the paintings from the Berlin museums, which was placed on sale during the exhibition. A catalog of the paintings presented by Mrs. Ralph Harman Booth was also prepared for the opening of that exhibit.

Since 1941 the history of the Publications Fund has been one of continual growth and development, and the fiscal year 1948 marks another step in providing a varied but well-balanced selection of publications and reproductions for public use.

The Publications Fund has continued to supply color reproductions of fine quality at a moderate price. During the year 8 new 11-inch by 14-inch color reproductions, 8 new color postcards, including 6 subjects from the Index of American Design, and 19 large collotype reproductions were made available. Of the large collotype reproductions, the Publications Fund now has 71 available. A new item was supplied this year in the form of playing-card sets, two of which portrayed subjects from the Index of American Design, and one of reproductions of paintings in the Gallery's collections.

Catalogues of the various collections continue to be popular. During the year, increased distribution exhausted the supplies of the Chester Dale Catalogue, the Preliminary Catalogue of Paintings and Sculpture, and the catalogue entitled Indigenous Art of the Americas. A fifth edition of the Chester Dale Catalogue is on order, and a textual catalogue of the entire collection to replace the Preliminary Catalogue is in preparation. The end of the fiscal year brought the first shipment of illustrated Widener Catalogues, and plans are in progress for a similar catalogue of the Mellon Collection.

With publication scheduled for 1949 or 1950, the manuscript for Erwin O. Christensen's comprehensive survey of the Index of American Design, "Made in America," is nearing completion. The National Gallery of Art is collaborating with Penguin Books Ltd. in preparing two books, "Popular Art in the United States," by Erwin O. Christensen, to be printed soon, and "Pictures from America," by John Walker, to be issued sometime next year.

EDUCATIONAL PROGRAM

During the year more than 20,000 persons attended the General, Congressional, and Special Topic Tours, while over 24,000 attended the Picture of the Week. Approximately 19,000 came to hear the lectures and other programs in the Auditorium. Special appointments, tours, and conferences were arranged for over 2,000 persons. The Education Department has continued the publication of a monthly Calendar of Events, announcing Gallery activities, including notices of exhibitions, lectures, gallery talks, tours, and concerts. The Calendar of Events was mailed out to more than 3,000 persons a month.

LIBRARY

The library was given 131 books, 447 pamphlets, and 26 periodicals during the year; 439 books, 55 pamphlets, and 608 periodicals were purchased, and 35 subscriptions to periodicals were made. A total of 55 books, 103 pamphlets, and 406 bulletins were received on exchange from other institutions; 265 photographs were received as gifts to the library, and 52 photographs were received on exchange. During the year, 1,249 books were borrowed and returned, 1,175 of which were borrowed from the Library of Congress. For the remaining 74 books, the library was indebted to museums, universities, and public libraries. In addition, by special arrangement, the Gallery received on loan from the Library of Congress a number of other books on art and related subjects.

INDEX OF AMERICAN DESIGN

The Index of American Design continued during the year to be enlarged by gifts and exchanges. Index material was used at the Gallery by 232 persons, while 534 photographs of Index designs were sold for use in commercial design, publications, references, exhibition, and other purposes.

INTER-AMERICAN OFFICE

The Inter-American Office suspended operations at the close of the the fiscal year, and its program of promoting art activities between the American republics was terminated, owing to the discontinuance of funds previously made available to the Gallery for this work.

CARE AND MAINTENANCE OF BUILDING

The installation of the fourth refrigeration machine to provide additional air conditioning for the Gallery building was completed in March 1948. Since that time the machine has been in operation whenever required and has been giving satisfactory service.

During the year the mechanical staff overhauled three of the other refrigeration machines, which would customarily have been done by outside contract. The usual routine work in connection with the structural care and maintenance of the building and its mechanical equipment was carried on throughout the year. Care and improvement of the Gallery grounds also progressed satisfactorily; and considerable replacements were made in the Taxus hedge in various areas. The gardening staff has continued to grow a substantial portion of the smaller plants used for the decoration of the two Garden Courts. Plans are now under way to extend the cold-frame equipment in the southwest moat, to enable the gardening staff to produce more small flowering plants used for decorative purposes.

The equipment in the cafeteria kitchen was rearranged during the year, and additional items were purchased, to facilitate the operation of the cafeteria.

OTHER ACTIVITIES

During the fiscal period a total of 47 Sunday evening concerts were given at the Gallery. The concerts, free to the public, attracted capacity audiences. Five Sunday evening concerts during the month of May were devoted to the Gallery's Fifth American Music Festival, the most successful of these to date.

A total of 155 permits to copy paintings and 107 permits to photograph in the Gallery were issued during the year. Prints of the motion picture on the National Gallery of Art were loaned during the year to 19 institutions.

During the year the photographic laboratory of the Gallery made 13,938 prints, 1,037 black-and-white slides, 891 color slides, 2,611 negatives, in addition to infrared photographs, ultraviolet photographs, and color separation negatives.

OTHER GIFTS

Gifts of books on art and related material were made to the Gallery library during the year by Paul Mellon and others. A sum of money was given by an anonymous donor to enlarge a previously established fund, the income from which will be available for the acquisition of works of art by American artists, and for prizes and awards to American artists.

AUDIT OF PRIVATE FUNDS OF THE GALLERY

An audit has been made of the private funds of the Gallery for the fiscal year ended June 30, 1948, by Price, Waterhouse & Co., public accountants, and the certificate of that company on its examination of the accounting records maintained for such funds will be forwarded to the Gallery.

Respectfully submitted.

Huntington Cairns,
Secretary.

The Secretary,
Smithsonian Institution.

APPENDIX 3

REPORT ON THE NATIONAL COLLECTION OF FINE ARTS

SIR: I have the honor to submit the following report on the activities of the National Collection of Fine Arts for the fiscal year ended June 30, 1948:

THE SMITHSONIAN ART COMMISSION

The twenty-fifth annual meeting was held on December 2, 1947, The members assembled at 10:30 a. m. in the Smithsonian Building to pass on the works of art which had been offered during the year. The following action was taken:

Accepted for the National Collection of Fine Arts

Oil, portrait of Mrs. Joseph B. Collins, by G. P. A. Healy (1813–94). Bequest of Miss Susanna Claxton Collins.

Oil, portrait of George Fuller (1822–84), by Edwin T. Billings (1824–93). Gift of Miss Catharine McE. Ames.

Oil, The Fall Season, by Bruce Crane, N. A. (1857–1937). Henry Ward Ranger bequest.

Oil, December Uplands, by Bruce Crane, N. A. (1857–1937). Henry Ward Ranger bequest.

Accepted for the National Portrait Gallery

Marble bust of Capt. John Ericsson (1803–89), by Augustus Saint-Gaudens, N. A. (1848–1907). Marble cut by Jonathan Scott Hartley for Augustus Saint-Gaudens who modified the bust by Horace Kneeland which is now in the National Museum, Stockholm, Sweden. Bequest of Miss Georgiana Wells Sargent.

The members then met in the Regents Room, adjacent, for further proceedings of the annual meeting. The meeting was called to order by the chairman, Mr. Manship. The members present were: Paul Manship, chairman; Dr. Alexander Wetmore, secretary (member, ex officio); and George Hewitt Myers, William T. Aldrich, Mahonri Young, Gilmore D. Clarke, David E. Finley, George H. Edgell, Lloyd Goodrich, John N. Brown, and Archibald G. Wenley. Ruel P. Tolman, Director, and Thomas M. Beggs, Assistant Director, National Collection of Fine Arts, were also present.

The Commission recommended the reelection of William T. Aldrich, James E. Fraser, George H. Edgell, and Lloyd Goodrich for the usual 4-year period.

The following officers were elected for the ensuing year: Paul Manship, chairman; Robert Woods Bliss, vice chairman; and Dr. Alexander Wetmore, secretary.

The following were elected members of the executive committee for the ensuing year: David E. Finley, chairman, Robert Woods Bliss, and Gilmore D. Clarke. Paul Manship, as chairman of the Commission, and Dr. Alexander Wetmore, as secretary of the Commission, are ex officio members of the executive committee.

THE CATHERINE WALDEN MYER FUND

Four miniatures, water color on ivory, were acquired from the fund established through the bequest of the late Catherine Walden Myer, as follows:

64. William Furness, attributed to Benjamin Trott; from Ray Rink, Baltimore, Md.
65. Matilda Watson (Mrs. John Watson), by Sarah Goodridge (1788–1853); from Bessie J. Howard, Boston, Mass.
66. Clara Bartlet Gregory Catlin (wife of the artist), by George Catlin (1796–1872); from Mary Cogswell Kinney, Washington, D. C.
67. Howes Goldsborough (1775–1841), by James Peale (1749–1831); from Edmund Bury, Philadelphia, Pa.

LOANS ACCEPTED

Twenty bronzes, by Frederic Remington, N. A. (1861–1909): Bronco Buster (small cast), Bronco Buster (large cast), Bronco Buster (Bonnard cast), Comanche Indian, Dragoons, Mountain Trapper, Off the Range, Outlaw, Polo Players, Rattlesnake, Scalp, Scalp, Trooper of the Plains, Wicked Pony, Wounded Bunkie, Indian Head, Head of the Rough Rider, Mountain Trapper, Stampede, and Paleolithic Man; and one bronze by Sally James Farnham, Paleolithic Woman, were lent by the R. W. Norton Art Foundation, Shreveport, La.

One miniature on ivory, Portrait of Miss Goss, by Eda Nemoede Casterton, was lent by the artist.

WITHDRAWALS BY OWNERS

Two oil paintings, Portrait of a Gentleman, by Sir William Beechey, and A Cottage Scene, by Ladbrooke, were withdrawn March 23, 1948, by Mrs. Feroline Perkins Wallach, Administratrix of the Estate of Cleveland Perkins.

LOANS TO OTHER MUSEUMS AND ORGANIZATIONS

Two oil paintings, Fired On, by Frederic Remington, and Mist in Kanab Canyon, by Thomas Moran, were lent to The Washington County Museum of Fine Arts, Hagerstown, Md., to be included in an exhibition "The American Indian and the West," from September 14 through November 2, 1947. (Returned November 3, 1947.)

An oil painting, Moonlight, by Albert Pinkham Ryder, was lent to the Whitney Museum of American Art, New York City, to be included in an exhibition of paintings by Ryder from October 17 to November 30, 1947. (Returned December 10, 1947.)

Eight pieces of porcelain from the Alfred Duane Pell bequest, were lent to Howard University, Washington, D. C., to be included in an exhibition of ceramics made between 450 B.C. and A.D. 1946, held from October 16 through November 30, 1947. (Returned December 5, 1947.)

Four oil paintings, Grand Canal, Venice; The Windmill, Dordrecht, Holland; Leonie; and Santa Maria della Salute, Venice, by Eugene L. Vail, were lent to the Engineers Club, 1325 E Street NW., Washington, D. C. (Returned June 25, 1948.)

An oil painting, The Flags (The Piazza San Marco, Venice), by Eugene L. Vail, was withdrawn by the National Gallery of Art. This painting was donated to the National Collection of Fine Arts by the artist's widow, subject to the condition that it be offered to the National Gallery of Art at the time it is eligible to become a part of that collection. It is understood that the painting shall be kept in the custody of the National Gallery of Art and may be loaned to the Department of State for the decoration of our Embassy in Ottawa.

An oil painting, Portrait of John Graham of Claverhouse, by Mary Beale, was lent with the consent of the owner, the Bruce Corporation, Ltd., to the British Overseas Airways Corporation, for a Scottish Display, June 21 to 30, 1948.

LOANS RETURNED

A water color, Coal Barge, Capri, 1880, by William H. Holmes, lent to The White House, January 25, 1946, was returned February 10, 1948.

THE HENRY WARD RANGER FUND PURCHASES

The paintings purchased by the Council of the National Academy of Design from the fund provided by the Henry Ward Ranger bequest, which, under certain conditions, are prospective additions to the National Collection of Fine Arts, and the names of the Institutions to which they have been assigned, are as follows:

Title	Artist	Assignment
120. Sunlight on the Waterfront	Ferdinand E. Warren, N. A. (elect) (1899-).	
121. Village Green	John Pike, N. A. (elect) (1911-)	
122. City By-Way	John Taylor (1897-)	Hickory Museum of Art, Hickory, N. C.
123. Gravel, Fish and Soya Beans	Carl Gaertner (1898-)	Sheldon Swope Art Gallery, Terre Haute, Ind.
124. Lobstermen	Andrew Winter, N. A. (1893-)	
125. Patio Royale, New Orleans	Robert Philipp, N. A. (1895-)	

Since it is a provision of the Ranger bequest that paintings purchased from the fund and assigned to American art institutions may be claimed by the National Collection of Fine Arts during the 5-year period beginning 10 years after the death of the artist represented, three paintings were recalled for action of the Smithsonian Art Commission at its meeting December 2, 1947.

Two Ranger Fund paintings were accepted by the Commission to become permanent accessions of the National Collection of Fine Arts as listed earlier in this report.

One Ranger Fund painting, The Harvest Moon, by Charles Melville Dewey, N. A. (1849–1937), was returned to the Fine Arts Society of San Diego, San Diego, Calif., thus becoming its absolute property.

THE NATIONAL COLLECTION OF FINE ARTS REFERENCE LIBRARY

A total of 470 publications (256 volumes and 214 pamphlets) were accessioned, bringing the total National Collection of Fine Arts library accessions to 11,016, plus the volumes of serials formerly accessioned by the Museum library for the "National Gallery of Art," now the National Collection of Fine Arts.

PRESERVATION

Plaster busts of Lincoln and Harrison, by Charles Henry Niehaus, were bronzed and delivered to The White House for Miss Marie J. Niehaus.

Portraits were cleaned, restored, and revarnished for the following departments: State Department—President Madison, by A. G. Heaton; William Seward, by Rufus Wright; and Hamilton Fish, by Daniel Huntington. Department of Agriculture—Secretary J. M. Rusk, by S. Jerome Uhl. Marine Corps of the Navy Department—Former Commanders Charles G. McCawley and William P. Biddle, by R. N. Brooke; Charles Heywood and John Zeilen, by L. H. Gebhard; and John Harris, by R. LeGrande Johnston.

Many minor repairs have been made to our own specimens.

PAINTINGS COPIED

The portrait of Commodore Stephen Decatur, by Gilbert Stuart, was copied by Casimir Gregory Stapko, Washington, D. C., for the University of Pennsylvania, ROTC.

INFORMATION SERVICE

The large number of requests for information and the volume of photographic prints and post cards sold in the office give evidence of the importance and value of these services. No detailed account has been kept of the many paintings, sculptures, and other art objects brought and sent in for examination and judgment.

Four outside talks were given to art organizations and service clubs concerning specific material in the National Collection of Fine Arts, or on subjects of general art interest. Service on juries of award was performed for five different art societies holding competitive exhibits.

CHANGE IN DIRECTORSHIP

Ruel P. Tolman, after 35 years with the Institution, including 15 years in which he directed the National Collection of Fine Arts, retired March 31, 1948. He was succeeded by Thomas M. Beggs, formerly professor of art, Pomona College, Claremont, Calif., who had been appointed Assistant Director July 30, 1947, and who became Director April 1, 1948.

SPECIAL EXHIBITIONS

October 6 through 31, 1947.—Exhibition of 78 paintings by Señor and Señora Oscar Garcia Rivera, of Havana, Cuba. A catalog was privately printed.

November 9 through 30, 1947.—The Tenth Metropolitan State Art Contest, held under the auspices of the District of Columbia Chapter, American Artists' Professional League assisted by the Entre Nous Club, consisting of 271 specimens of paintings, sculpture, prints, ceramics, and metalcraft. A catalog was privately printed.

January 7 through 29, 1948.—The Sixth Annual Exhibition of the Florida Gulf Coast Group, consisting of 51 paintings. A catalog was privately printed.

January 16 through February 15, 1948.—The Forty-sixth Annual Exhibition of Miniatures by The Pennsylvania Society of Miniature Painters, consisting of 120 miniatures. Reprint of catalog used in Philadelphia.

March 7 through 28, 1948.—The Fifty-second Annual Exhibition of the Washington Water Color Club, consisting of 190 paintings and prints. A catalog was privately printed.

March 7 through 28, 1948.—The Fifteenth Annual Exhibition of The Miniature Painters, Sculptors and Gravers Society of Washington, D. C., consisting of 168 examples. A catalog was privately printed.

April 4 through 28, 1948.—The Fifty-seventh Annual Exhibition of The Society of Washington Artists, consisting of 69 paintings and 13 pieces of sculpture. A catalog was privately printed.

May 16 through 30, 1948.—Biennial Exhibition of the National League of American Pen Women, consisting of 228 specimens of paintings, sculpture, prints, ceramics and metalcraft. A catalog was privately printed.

June 7 through 29, 1948.—Exhibition of 168 paintings in oil and water color made during three expeditions to Tibet by the French painter Lafugie.

Respectfully submitted.

THOMAS M. BEGGS, *Director.*

Dr. A. WETMORE,
Secretary, Smithsonian Institution.

APPENDIX 4

REPORT ON THE FREER GALLERY OF ART

Sir: I have the honor to submit the twenty-eighth annual report on the Freer Gallery of Art for the year ended June 30, 1948.

THE COLLECTIONS

Additions to the collections by purchase were as follows:

BRONZE

47.11. Chinese, Shang dynasty (1766–1122 B. C.; late). Ceremonial tripod of the type *li-ting;* variable gray to green patina; decorated with casting in low and bold relief and in intaglio; strongly projecting flanges; inscription of one character. 0.218 x 0.184.

47.12. Chinese, Chou dynasty (1122–256 B. C.). Covered ceremonial vessel of the type *yu;* smooth variable olive-green to brown patina; decorated with casting in low relief; zoomorphic heads in the round terminating bail handle; inscription of three characters. 0.229 x 0.228.

47.13, 47.14. Chinese, T'ang dynasty (A. D. 618–906). Pair of seated lions cast in bronze and gilded; encrustations of cuprite, azurite, and malachite; details incised; on low square platforms with lotus bases; rectangular mortises and incised characters underneath. 0.092 x 0.052; 0.093 x 0.052.

47.15. Chinese, Chou dynasty (1122–256 B. C.; late). Incense burner of the type *Po-shan Hsiang-lu;* stemcup with high conical cover cast in relief to represent mountain landscape with animals and human figures; entwined dragons in relief around foot; inlaid with gold, silver, turquoise, and carnelian. 0.179 x 0.100.

47.20. Chinese, Chou dynasty (1122–256 B. C.; late). Covered ceremonial tripod of the type *ting;* green patina with encrustations of azurite and malachite; upper part of body, cover, and handles decorated with casting in low relief. 0.385 x 0.493.

48.1. Chinese, Shang dynasty (1766–1122 B. C.; late). Ceremonial vessel of the type *hu;* silvery and grayish-green patina with encrustations of cuprite and malachite; decorated with casting in relief; bovine heads as handle lugs. (Illustrated.) 0.381 x 0.274 x 0.227.

IVORY

48.3, 48.4, 48.5. Chinese, T'ang dynasty (A. D. 618–906). Three figures of carved ivory aged to dark brown; representing three Buddhist deities: the Bodhisattva Avalokiteśvara, the Buddha Maitreya and the Bodhisattva Bhaiṣajyaguru. 0.095 x 0.020; 0.094 x 0.021; 0.095 x 0.020.

LACQUER

47.24. Chinese, Chou dynasty (1122–256 B. C.; late). Shallow cup of wood covered with red and brown lacquer; lateral handles; geometric, floral, and animal decoration; from Ch'ang-sha. 0.050 x 0.171 x 0.152.

MANUSCRIPT

47.19. Persian, Mongol period (early 14th century). Fragment of *Tarjama-i Tārīkh-i Tabarī*, i. e., Bal'amī's Persian translation of Tabarī's *Universal History;* 205 fols.; 33 lines of black *naskhī* per page with captions in red *naskhī*; seven miniatures in color and gold; modern red leather binding; pages 0.410 x 0.285.

PAINTING

47.17. Chinese, Ming dynasty (A. D. 1368–1644). Scroll painting by Hsü Pên dated in correspondence with A. D. 1377; landscape in ink on paper; signature and 11 seals on painting; title, 7 colophons and 18 seals on mounting. (Illustrated.) 0.285 x 4.968.

47.21. Persian (14th or 15th century). Page from a pharmacological treatise; paintings in color on paper of a duck (obverse) and a cock pheasant or jungle cock (reverse); *naskhī* script in black for text, red for headings. (Illustrated.) 0.245 x 0.162.

47.22. Persian (first half 16th century). A galloping Turki horseman painted in black and red on paper; inscription "Portrait of Muḥammad Shah Padishah"; seal. 0.101 x 0.154.

47.23. Persian (late 16th or early 17th century). A dervish in landscape smoking a *qualiūn* pipe held by a disciple; black and colors on paper; Signed by Muḥammad Muḥsin. 0.168 x 0.093.

POTTERY

47.16. Chinese, Ch'ing dynasty, K'ang-hsi period (A. D. 1662–1722). Vase with globular body, low foot and tall, slender neck; thick, rich gray-blue glaze with minute bubbles and brown stained crackle. 0.412 x 0.212.

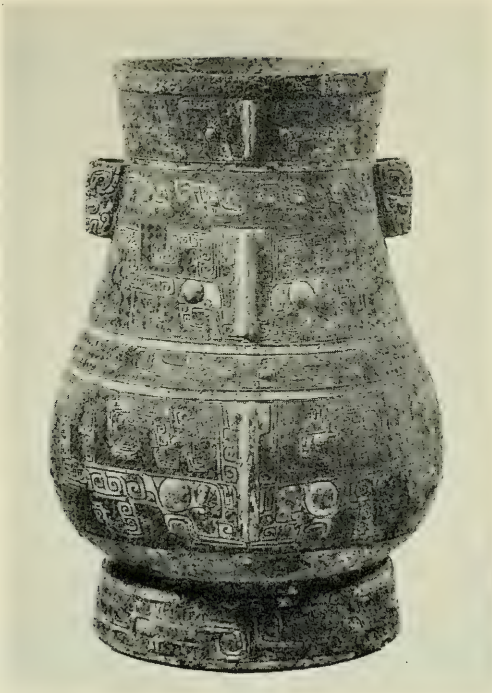
47.18. Persian, Seljuk period (11th-12th century). Deep bowl of fine white clay; decorated with the figure of a winged griffon carved in the body and covered with blue, green, purple and yellow glazes against the white glaze. (Illustrated.) 0.0083 x 0.344.

48.2. Chinese, Ming dynasty (A. D. 1368–1644; early). Vase of bottle shape with high spreading foot, slightly spreading neck, and short vertical lip; annular handles and free-moving rings; white porcelain with creamy-white glaze; decorated with phoenixes and dragons finely incised in the clay almost invisible under the glaze. 0.185 x 0.085.

48.6. Chinese, T'ang dynasty (A. D. 618–906). Tomb figurine of a seated man holding a fowl on his left knee and a basket of peas (?) on his right; fine-grained, buff-white clay, partly glazed and the rest painted with black, green, and red. 0.260 x 0.171 x 0.168.

48.7. Chinese, T'ang dynasty (A. D. 618–906). Tomb figurine of a woman seated on the ground holding and feeding a fowl; fine-grained buff-white clay painted with black, green, and red. 0.151 x 0.152 x 0.171.

The work of the staff members has been devoted to the study of new accessions, of objects submitted for purchase, and to general research within the collections of Chinese, Japanese, Arabic, Persian, and Indian materials. Reports, oral or written, were made upon 3,498 objects and 1,108 photographs of objects submitted for examination; and 288 oriental language inscriptions were translated.



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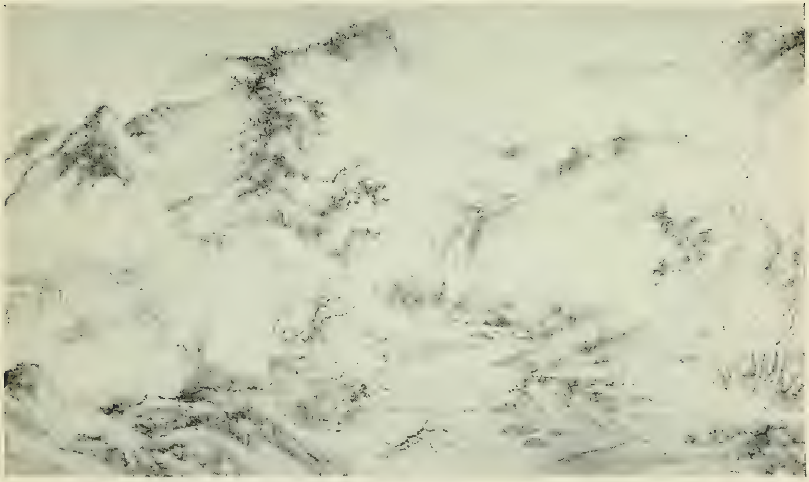
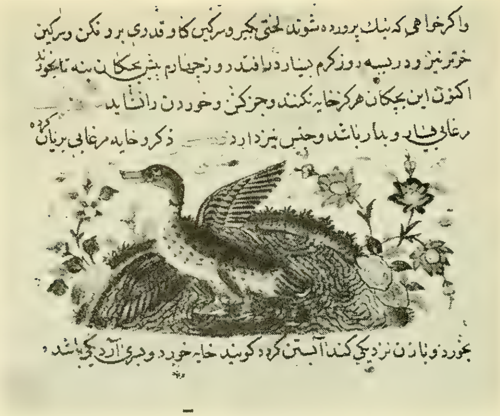
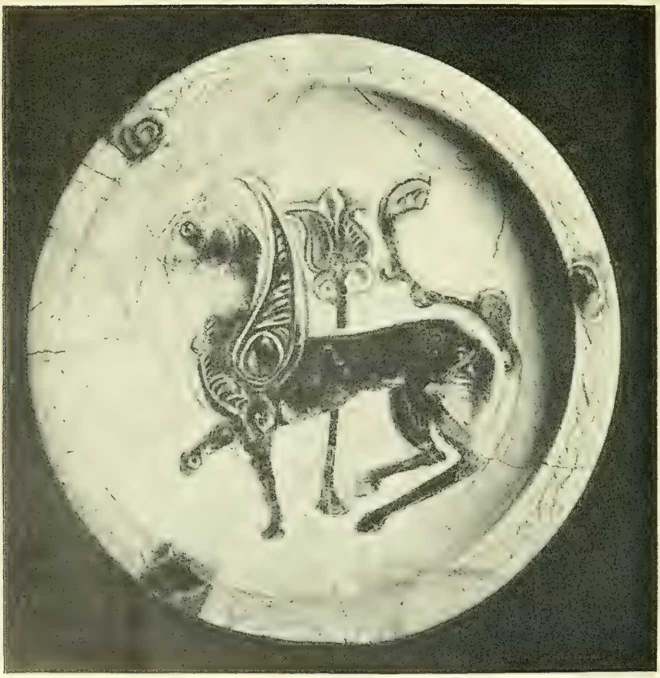


47.17

RECENT ADDITIONS TO THE COLLECTION OF THE FREER GALLERY OF ART.



47.21



47.18

RECENT ADDITIONS TO THE COLLECTION OF THE FREER GALLERY OF ART

REPAIRS TO THE COLLECTIONS

A total of 16 objects were remounted or repaired as follows:

Chinese paintings remounted	10
Chinese painting repaired	1
Chinese sculpture repaired	1
Japanese painting remounted	1
Japanese paintings repaired	2
Japanese pottery repaired	1

The long-overdue task of repairing and restoring the Peacock Room by James McNeill Whistler was begun on October 10, 1947. This work involves taking down all four walls of the room, removing all leather from the original paneling, constructing a complete set of new panels of harborite, reconditioning the leather and cleaning all painted and gilded surfaces, remounting the leather on the new panels by means of a moisture-proof wax adhesive, and reinstalling all panels and shelving. All phases of the actual restoration are being done by Messrs. John A. and Richard M. Finlayson of the Museum of Fine Arts, Boston, on a part-time schedule. All structural work is being done in the Gallery cabinet shop. The work is still in progress.

CHANGES IN EXHIBITIONS

Changes in exhibitions totaled 1,196, as follows:

American arts:	
Paintings	92
Drawings and pastels	32
Prints	43
Arabic arts:	
Bookbinding	4
Glass	2
Manuscripts	35
Painting	16
Wood carving	2
Armenian arts:	
Manuscript	24
Bactrian arts:	
Metalwork	2
Byzantine arts:	
Crystal	2
Metalwork	9
Painting	12
Chinese arts:	
Bronze	100
Jade	42
Metalwork	31
Painting	38
Pottery	31
Textile	2
Wood sculpture	6

CHANGES IN EXHIBITIONS—continued

Coptic arts:	
Manuscript	1
Painting	6
Egyptian arts:	
Pottery	3
Greek arts:	
Manuscript	16
Indian arts:	
Manuscript	6
Painting	145
Scuplture	12
Japanese arts:	
Lacquer	18
Painting	125
Pottery	78
Scuplture	4
Korean arts:	
Bronze	1
Pottery	30
Mesopotamian arts:	
Pottery	8
Persian arts:	
Bookbinding	6
Manuscript	10
Metalwork	23
Painting	124
Pottery	38
Syrian arts:	
Glass	11
Metalwork	5
Veneto-Islamic arts:	
Metalwork	1

ATTENDANCE

The Gallery was open to the public from 9:00 to 4:30 every day except Christmas Day. The total number of visitors to come in the main entrance was 77,012. The weekday total was 61,916 and the Sunday total was 15,096. The average weekday attendance was 198, the average Sunday attendance was 290. The highest monthly attendance was in July with 12,230 visitors; the lowest was in December with 3,045 visitors.

There were 1,650 visitors to the main office during the year; the purposes of their visits were as follows:

For general information	1, 113
To see staff members	115
To read in the library	266
To make sketches and tracings from library books	17
To see building and installations	46
To make photographs in court and sketches in exhibition galleries	41

To examine, borrow, or purchase photographs and slides		308
To submit objects for examination		433
To see objects in storage		214
Washington manuscripts	10	
Far Eastern paintings and textiles	52	
Near Eastern paintings and manuscripts	11	
Tibetan paintings	1	
American paintings	32	
Whistler prints	4	
Oriental pottery, jade, bronze, lacquer, and bamboo	88	
Gold treasure and Byzantine objects	3	
All sculpture	10	
Syrian and other glass	3	

DOCENT SERVICE, LECTURES, MEETINGS

By request, 16 groups met in the exhibition galleries for instruction by staff members. Total attendance was 311.

On invitation, the following lecture was given outside the Gallery by a staff member:

1948	
Feb. 5	Mr. Pope lectured on "The Pottery and Porcelain of China" at the Chevy Chase Women's Club. Attendance: 30.

The Auditorium was used for meetings as follows:

1947	
Nov. 4	Bureau of Economics, U. S. Department of Agriculture. Attendance: 80.
Nov. 5	Ditto. Attendance: 155.
Nov. 6	Ditto. Attendance: 140.
Nov. 7	Ditto. Attendance: 75.
1948	
Jan. 20	Art Section, Twentieth Century Club; lecture by Mr. Pope. Attendance: 90.
Mar. 4	Art Section, Chevy Chase Women's Club; lecture by Mr. Pope. Attendance: 20.
Apr. 29	Division of Dairy Herds Industry, U. S. Department of Agriculture. Attendance: 45.
May 5	National Conference on Family Life. Attendance: 212.
May 7	National Conference on Family Life. Attendance: 52.
June 11	Museum group. Special Libraries Association; lecture by Mr. Pope. Attendance: 36.

Members of the staff traveled outside of Washington for professional purposes as follows:

1947	
July 12	Dr. Ettinghausen in Baltimore, at the Walters Art Gallery, to examine and select Indian miniatures for exhibition in London.
Oct. 4–10	Mr. Pope in New York and Boston; in the Museum of Fine Arts, attended symposium in connection with exhibition of the Bernat collection; examined objects belonging to museums, private collections, and dealers.

1947	
Nov. 12	Mr. Pope in Baltimore, at the Baltimore Museum of Art, to examine objects of Siamese art and select for exhibition.
Nov. 21	Mr. Pope in Philadelphia, at the Philadelphia Museum of Art, to examine objects and discuss plans for a proposed exhibition.
Dec. 10–11	Mr. Wenley in Williamsburg, Va., at the College of William and Mary, to examine Chinese objects and select for exhibition.
1948	
Feb. 5	Dr. Ettinghausen in Baltimore, at the Walters Art Gallery, to examine objects.
Feb. 20–21	Mr. Pope in New York; examined objects belonging to dealers.
Mar. 29–Apr. 2	Mr. Wenley in New York; attended annual meeting of the American Oriental Society; at executive committee meeting he reported on the Hackney Scholarship Fund of which he is committee chairman; examined objects belonging to dealers; attended organization meeting of the Far Eastern Association.
Mar. 30–Apr. 2	Mr. Pope in New York; attended annual meeting of the American Oriental Society; examined objects belonging to dealers; served as temporary secretary at all-day organizational meeting of the Far Eastern Association, and was elected to Board of Directors of the Association.
Apr. 1–14	Dr. Ettinghausen in New York, Boston, and Cambridge; attended meeting of Committee on Near Eastern Studies of the American Council of Learned Societies; examined objects belonging to museums and dealers; did research in connection with current studies.
Apr. 15–18	Mr. Wenley in Ann Arbor; at the University of Michigan, conferred with University officers on problems related to Far Eastern studies.
May 14–18	Dr. Ettinghausen in Boston, Cambridge, New York, Princeton, and Philadelphia for research and conferences in connection with objects in the collections and Gallery publications; in Boston attended meeting of the Archaeological Institute of America to discuss the foundation of an American School of Egyptian Studies in Cairo; examined objects belonging to museums, private collections, and dealers.
May 15–18	Mr. Pope in Boston, Cambridge, and New York; at the Fogg Museum of Art attended a pottery symposium which resulted in the formation of the Far Eastern Ceramic Group; conferred with editors of Harvard Journal of Asiatic Studies; examined objects belonging to museums, private collections, and dealers.
May 24	Mr. Wenley and Mr. Rawley in New York; attended symposium on museum lighting at the Metropolitan Museum of Art.

1948	
May 25–28	Mr. Wenley in Providence, Boston, and Cambridge; attended annual meeting of the Association of Museum Directors at the Museum of the Rhode Island School of Design; at the Fogg Museum of Art and the Museum of Fine Arts, examined bronzes, paintings, and new accessions.

Respectfully submitted.

A. G. Wenley, *Director.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

APPENDIX 5

REPORT ON THE BUREAU OF AMERICAN ETHNOLOGY

Sir: I have the honor to submit the following report on the field researches, office work, and other operations of the Bureau of American Ethnology during the fiscal year ended June 30, 1948, conducted in accordance with the Act of Congress of June 27, 1944, which provides "* * * for continuing ethnological researches among the American Indians and the natives of Hawaii and the excavation and preservation of archeologic remains. * * *"

SYSTEMATIC RESEARCHES

Dr. M. W. Stirling, Director of the Bureau, spent the first part of the fiscal year in Washington attending to administrative duties and in preparing a study on "Olmec Jade."

On January 1 Dr. Stirling left for western Panamá where he spent 3½ months in the excavation of four archeological sites on the Azuero Peninsula in cooperation with the National Geographic Society. Two of these were representative of the relatively late Coclé culture. A third was a mound site representing a new culture apparently ancestral to Coclé, while the fourth site was a shell mound near the mouth of the Parita River, which was found to contain a very early and completely new culture, unrelated to anything heretofore known in Panamá. During this work Dr. Stirling was assisted in the field by Dr. Gordon Willey of the Bureau staff.

At the close of the archeological field season a brief visit was made to the Guaymí Indians in the Province of Chiriquí.

Dr. Frank H. H. Roberts, Jr., Associate Director of the Bureau and Director of the River Basin Surveys, was mainly occupied throughout the fiscal year in directing the River Basin Surveys. In connection with this work he established cooperative projects with State and local institutions in various parts of the country, aided in the preparation of preliminary reports pertaining to the results of investigations in various reservoir basins, and wrote progress reports for the cooperating agencies. He went to Lincoln, Nebr., November 26 to December 5, where he inspected the field headquarters and laboratory for the Missouri Basin project, received reports on the results of the summer's surveys in that area, and aided in the preparation of plans for evaluating and handling the material collected. While in Lincoln he attended sessions of the Fifth Plains Conference for Archeology and presided at a symposium on "The Paleo-Indian in the

Central Plains." He also took part in a regional conference of National Park Service officials at which various phases of the River Basins program were discussed and plans for the future were formulated. In May he went to Milwaukee, Wis., to attend the annual meeting of the Society for American Archeology and presided over a symposium on "The River Basin Archeological Surveys." Dr. Roberts' report on the River Basin Surveys appears in another section of this report.

Dr. John P. Harrington, ethnologist, was occupied at the beginning of the fiscal year in the preparation of a supplement to his recently completed Aleutian grammar. This supplement contains a long list of terms relating to natural history, weather, material cultures, sociology, religion, and geography. Following this Dr. Harrington completed a grammar of the Maya language consisting of 750 typewritten pages. This study is of particular importance, as Maya is one of the "classic" languages of aboriginal America.

Dr. Harrington then prepared and brought to completion a grammar of the Cahuilla language. The Cahuilla Indians are at present the leading native tribe of southern California. A large report on the Guaraní language of South America was also finished. Guaraní in the Republic of Paraguay has been given equal official and legal standing with Spanish. This is the only instance in which a native Indian language has been given a true literate status. A smaller paper on the Matako language of the central part of the Gran Chaco of Argentina was next completed. It was found that in many respects this language is surprisingly similar to Guaraní. Another large paper was then prepared, describing and discussing the three principal ideographic writing systems of the world, Egyptian, Chinese, and Maya.

Dr. Henry B. Collins, Jr., ethnologist, spent the period from June 19 to August 16 on Martha's Vineyard, Mass., engaged in an archeological survey of the western end of the island. He found a number of prehistoric Indian village and camp sites, mainly in the Chilmark-Menemsha-Gay Head region, and made collections of artifacts. On returning to Washington he resumed his Eskimo studies.

As chairman of the Board of Governors of the Arctic Institute of North America, Dr. Collins continued to devote considerable time to the affairs of that organization. In the course of the year the Arctic Institute, with increased support from governmental and other sources, expanded its research and other activities. It opened a New York office at the American Geographical Society headquarters, established an open membership, and began publication of a journal. It sponsored and administered a number of field studies in anthropology, botany, zoology, geology, and geography. These projects carried out in Alaska and northern Canada were financed in large part by the office of Naval Research and the Canadian Government.

Dr. Collins continued to serve as chairman of the Directing Committee for the Arctic Institute's Bibliography and Roster projects. This committee selected personnel and put into operation these two projects—the preparation of a comprehensive annotated and indexed bibliography on the Arctic, and a roster of Arctic specialists. The projects are supported by funds from the Office of Naval Research, the Army and the Defense Research Board of Canada. The bibliography project, with four expert bibliographers and three assistants, is under way at the Library of Congress; the roster project, with a director and assistant, has been given office space in the building of the Carnegie Institution of Washington.

At the invitation of the Canadian Government, Dr. Collins left Washington late in June to conduct archeological work for the Smithsonian Institution and the National Museum of Canada in the northern part of the Canadian Arctic Archipelago.

At the beginning of the year Dr. William N. Fenton was on leave while teaching in the summer session of Northwestern University (June 23 to August 23), where he was invited to occupy the post of professor in the department of anthropology during that quarter. While in the Chicago area, he was able to spend considerable time examining rare books and manuscripts in the Ayer Collection of the Newberry Library and to study ethnological collections from the Iroquois Indians in the Milwaukee Public Museum and in the Chicago Natural History Museum. Returning, Dr. Fenton spent the first 2 weeks of September at field work among the Seneca Indians of Allegany Reservation in western New York.

Teaching a course in primitive political institutions suggested a plan for undertaking a comprehensive political history of the League of the Iroquois which would attempt to test the findings of ethnology in the historian's traditional materials. The documentary materials on the Six Nations comprising the Iroquois League for the Federal Period alone and for the succeeding first decade of the nineteenth century exist in several large collections of papers which have not been used extensively by historians of Federal and Indian political relations. First, the papers of Samuel Kirkland (1741–1808) contain interesting sidelights on the political activities of the Six Nations, covering missionary activities among the Oneida, Tuscarora, and Seneca tribes; the correspondence of an agent of the American Revolution; and the gradual civilization of the native Indians. Examination of the Kirkland papers at Hamilton College was begun in September with the help of M. H. Deardorff of Warren, Pa., and Charles E. Congdon, an alumnus. The project is indebted to Dr. Arthur C. Parker of Naples, N. Y., for the loan of a Seneca Census of

1840 and several minute books of the Six Nations Council at Buffalo Creek by the New England missionary Rev. Asher Wright; these have subsequently been acquired by the American Philosophical Society.

Two grants were received for Iroquois research. Toward the collection of materials for a political history of the Iroquois the American Philosophical Society made a grant for travel, photoduplication, and secretarial assistance; and a similar grant was received from the Viking Fund, Inc., for field work.

Beginning in February, Dr. Fenton spent about 1 week of each month in travel to repositories of historical materials. He visited Salem and Boston to examine the Timothy Pickering papers, working in the Essex Institute and the Peabody Museum of Salem, and the Massachusetts Historical Society and the Houghton Library of Harvard in the Boston area. Frequent short trips were made to the library of the American Philosophical Society, Philadelphia, to examine parallel papers and to identify a Constitution of the Iroquois Confederacy by Seth Newhouse. In April Dr. Fenton went back to Hamilton College for further work on the Kirkland papers, and returning, he stopped at Vassar College library to arrange for copying the Jasper Parrish papers. Kirkland, Pickering, and Parrish were all concerned in negotiating treaties with the Six Nations after the Revolution, and their letters led to the immense collection of mementos relating to western New York which Henry O'Reilly of Rochester had collected in 15 large folio volumes for presentation to the New York Historical Society. By the end of June Dr. Fenton had completed a first examination of the O'Reilly papers and had arranged for microfilming a substantial part of them. A policy of collecting as much as practicable on microfilm has cut down the cost of travel.

Dr. Fenton completed a term as senior editor of the Journal of the Washington Academy of Sciences. In June he was appointed anthropologist member of the Language Panel of the United States National Commission for UNESCO.

A second album of Iroquois records with program notes, edited by Dr. Fenton, entitled "Seneca Songs from Coldspring Longhouse," was published by the Library of Congress.

Dr. Philip Drucker, anthropologist, was detailed to the River Basin Surveys July 1 to October 1, 1947, for work in the Columbia Basin. He returned to Washington on October 1, and during the ensuing months he brought to completion an ethnographic monograph entitled "The Northern and Central Nootkan Tribes," based on field investigations which he had made among the Nootkan-speaking Indians of Vancouver Island, British Columbia, some years before. This report describes in detail mode of life and customs of these Indians during the closing decades of the nineteenth century and is to be followed by a study tracing the cultural changes produced by European contacts during the maritime fur trade a century earlier. On finishing this report, he completed an archeological monograph, "La Venta, Tabasco: A Study of Olmec Ceramics and Art," which summarizes the principal results of the studies made by the Smithsonian Institution-National Geographic Society expeditions to southern Veracruz and Tabasco, Mexico. In addition, he prepared two short papers for publication—"Preliminary Account of Archeological Reconnaissance on the Chiapas Coast," and one entitled "The Antiquity of the Northwest Coast Totem Pole"—as well as summary reports for the Director, River Basin Surveys, on the results of investigations of 14 reservoir areas in the Columbia Basin and of 10 in California during the preceding field season.

On May 2 Dr. Drucker proceeded to Boston and Salem, Mass., to examine collections of manuscript materials and museum collections from the period of the maritime fur trade on the Northwest Coast, in the archives of the Massachusetts Historical Society and in the Peabody Museum, Salem. Through the courtesy of officials of those institutions, he was given access to the collections and was able to assemble a considerable amount of unpublished data relating to the problem of culture change due to early European influences. On May 9 he returned to Washington.

On May 13 he was again detailed to the River Basin Surveys and left for the Pacific Coast, to resume charge of the River Basin Surveys work there. He was occupied with these duties at the end of the fiscal year.

Dr. Gordon R. Willey was detailed to the River Basin Surveys for the period August 15 to October 1, 1947, for work in Tennessee.

In the month of October Dr. Willey was occupied in writing additional sections of a report, "Ancon and Supe: Formative Period Sites of the Central Peruvian Coast." This paper is being prepared in conjunction with J. M. Corbett and L. M. O'Neale and is to be published under the auspices of Columbia University. In November and December full time was devoted to a long monograph "Archeology of the Florida Gulf Coast." This involved both writing and a museum survey in late November. Collections were examined in Cambridge, Andover, and New York.

On January 1, Dr. Willey accompanied Dr. Stirling to western Panamá for 3½ months of archeological excavations in Herrera Province. Four sites were examined and stratigraphic tests made in the most promising locations of each. May and June, following the return from Panamá, were occupied with writing the "Archeology of the Florida Gulf Coast." This report should be completed early in September 1948.

In addition to regular research duties, Dr. Willey has attended two meetings of the Institute of Andean Research, of which he is a member, and a meeting of Florida archeologists held early in August at Daytona Beach. He has also served as assistant editor to American Antiquity, to the Handbook of Latin American Studies, and to the Journal of American Archaeology. For all these journals his work has entailed the covering of recent South American archeological literature.

In the Bureau he has acted as consultant during the final editing of the third and fourth volumes of the Handbook of South American Indians.

The following articles were prepared by Dr. Willey for publication during the year 1947–48: "Culture Sequence for the Manatee Region of West Florida," American Antiquity, vol. 13, No. 3; "The Cultural Context of the Crystal River Negative Painted Style," American Antiquity, vol. 13, No. 4; "A Proto-type of the Southern Cult," American Antiquity, vol. 13, No. 4.

SPECIAL RESEARCHES

Miss Frances Densmore, collaborator of the Bureau, conducted special research on music among the South American Indians and submitted a manuscript entitled "Musical Customs of the Southern Hunter Indians of South America" as compiled from the Handbook of South American Indians.

INSTITUTE OF SOCIAL ANTHROPOLOGY

The Institute of Social Anthropology was created in 1943 as an autonomous unit of the Bureau of American Ethnology to carry out cooperative training in anthropological teaching and research with the other American republics. During the past year it was financed by transfers from the Department of State, totaling $94,882, from the appropriation "Cooperation with the American Republics, 1948." The major activities of the Institute of Social Anthropology during the fiscal year 1948 are as follows:

Washington office.—Dr. George M. Foster continued as director of the Institute of Social Anthropology. He traveled to six South American countries during the period February 14 to April 12, 1948, visiting Institute of Social Anthropology field stations in Popayán, Colombia, Lima, Perú, and São Paulo, Brazil. In addition, courtesy calls were made on anthropologists in Barranquilla and Medellín, Colombia, Quito, Ecuador, Cusco, Perú, La Paz, Bolivia, Rio de Janeiro, Brazil, and Caracas, Venezuela. Dr. Foster also spent 3 weeks in México (November 25–December 15, 1947) reading final proof on Publication No. 6 of the Institute of Social Anthropology.

Brazil.—Drs. Donald Pierson and Kalervo Oberg continued their work in São Paulo in cooperation with the Escola Livre de Sociología e Política. They gave a number of courses in sociology and anthropology, supplementing other courses given by local professors in the general field of the humanities. Dr. Oberg, accompanied by several advanced students, returned to the Mato Grosso for 3 months, July-September 1947, to complete field work initiated the preceding year among the Terena and Caduveo Indians. Dr. Pierson, assisted by advanced students, continued field work at "A Vila," a *caboclo* community near São Paulo. The proximity of "A Vila" to São Paulo made it possible to utilize week ends and short vacations throughout the year, rather than spending a continuous longer period in the field.

Colombia.—Dr. John H. Rowe continued to represent the Institute of Social Anthropology in Popayán, Colombia, cooperating with the Instituto Etnológico of the Universidad del Cauca. Courses in ethnology, linguistics, and archeology were given to the students enrolled in the Instituto and 2 months of field work was carried out among the nearby Guambiano Indians, August–September 1947. Dr. Rowe also twice visited Bogotá to consult with local anthropologists of the National Ethnological Institute concerning anthropological activities in Colombia. Sr. Gabriel Ospina, formerly a student of Institute of Social Anthropology scientists in México, was named director of the newly established Instituto de Antropología Social of the Escuela Normal Superior. Utilizing field techniques learned while working with Dr. Foster in Tzintzuntzan, México, he began a 4-year anthropological study of the pueblo of Vianí, to train local personnel, and to throw light on the functioning of this aspect of Colombian culture.

México.—Dr. Isabel Kelly and Dr. Stanley Newman continued to represent the Institute of Social Anthropology in its cooperative plan with the Escuela Nacional de Antropología. Because of reduced appropriations as compared to the fiscal year of 1947, it was necessary to terminate studies in cultural geography on August 31, 1947, when Robert C. West left this service. Five courses in ethnology and linguistics were given during the academic year. Dr. Kelly, assisted by four students, returned to Tajín, Veracruz, to continue her study of the Totonac Indians. A photographic exhibit in the Benjamin Franklin Library in May 1947, of Totonac Indian scenes, prepared by Dr. Kelly, received favorable comment from many Mexicans, and was thoroughly described in El Nacional, the official Mexican Government newspaper. Dr. Newman, working with other faculty members and students, and working with native informants brought from the field, continued research on the Otomí and Nahuatl languages.

Perú.—Dr. Allan Holmberg continued to represent the Institute of Social Anthropology in Perú in its cooperative work with the Instituto de Estudios Etnológicos. As in the case of México, reduced appropriations made it necessary to reduce the Peruvian staff; the services of

Dr. Webster McBryde were terminated on September 30, 1947. Dr. Holmberg gave three courses in ethnology during the year; two, including a seminar on field methods, in the Instituto de Estudios Etnológicos, and one in the University of San Marcos. Three months, February through April, 1948, were again spent in the Virú Valley, bringing to a close the studies initiated the preceding year by Dr. Holmberg, Dr. Jorge Muelle of the Instituto faculty, and selected students.

Dr. Holmberg was one of three official United States delegates to the Hylean Amazon Project of the UNESCO in Iquitos, Perú, in May 1948.

Publications.—Institute of Social Anthropology Publications Nos. 4, 5, 6, and 7, appeared during the fiscal year. These are listed with the publications of the Bureau of American Ethnology.

RIVER BASIN SURVEYS

The River Basin Surveys, a unit of the Bureau of American Ethnology organized to carry into effect a memorandum of understanding between the Smithsonian Institution and the National Park Service providing for the recovery of such archeological and paleontological data and materials as will be lost through the construction of dams and the creation of reservoirs in many of the river valleys of the United States, continued its investigations throughout the year. The work was carried on in cooperation with the National Park Service and the Bureau of Reclamation, Department of the Interior, and the Corps of Engineers, Department of the Army, and was financed by the transfer of $73,800 from the National Park Service to the Smithsonian Institution. These funds were provided in part by the National Park Service and in part by the Bureau of Reclamation.

Most of the work in the field was of a reconnaissance or survey nature, with only a limited testing of sites where such was necessary to determine their extent and character. In a few cases, however, actual excavations were undertaken. The activities involved 18 States and 38 reservoir areas. By the end of the year the number of reservoir basins surveyed, since the first parties started in July 1946, totaled 85. Their distribution is: Virginia 1, West Virginia 2, Georgia 2, Tennessee 1, Oklahoma 2, Texas 5, Colorado (outside of the Missouri Basin) 4, California 13, the Missouri Basin (7 States) 50, and the Columbia Basin (4 States) 15. Those where surveys were under way but not completed by June 30 are not included in this summary. In the various areas visited 1,576 sites were noted and recorded and of that number 250 have been recommended for extensive excavation. The excavations completed or in progress on June 30 were: New Mexico 1, Wyoming 1, Nebraska 1, South Dakota 1, North Dakota 1, Texas 1, and Washington 1. Preliminary appraisals with recommendations for further work, supplemented by some technical reports, have been completed for all the areas surveyed. Limited editions of 61 have been mimeographed for distribution to the cooperating agencies. The others were in varying stages of being processed at the end of the year. These mimeographed pamphlets have not been made available to the general public because they are not complete archeological reports and are intended to be used only for reference purposes by the Surveys staff while the program is going forward. Reports for general distribution will be issued after the archeological and paleontological work in each unit has been completed.

General direction and supervision of the work in Georgia, West Virginia, Tennessee, Oklahoma, Texas, New Mexico, Colorado (outside of the Missouri Basin), and some of the California projects were from the main office in Washington. Direction of the program in the Missouri Basin was from a field headquarters and laboratory at Lincoln, Nebr., while the activities in the Columbia-Snake Basin were under the supervision of a field office located at Eugene, Oreg.

The assistance and whole-hearted cooperation given to River Basin Surveys staff men in the field by representatives of the National Park Service, the Bureau of Reclamation, and the Corps of Engineers contributed in no small degree to the success of much of the work. At some of the projects temporary office space and storage facilities were provided, at others transportation was furnished, and in a few cases labor was made available to help in emergency excavations where material had to be recovered immediately. The National Park Service not only obtained the funds necessary for carrying on the program as a whole, but also served as the liaison between the Smithsonian Institution and the other governmental agencies to the benefit of all concerned.

Washington office.—The main office of the River Basin Surveys was under the direction of Dr. Frank H. H. Roberts, Jr., throughout the fiscal year. Carl F. Miller, archeologist, continued to operate from this office, while Joseph R. Caldwell joined the staff as archeologist on December 14, 1947, by transfer from the United States National Museum, and Ralph S. Solecki was appointed in the same capacity on March 2, 1948.

Mr. Miller spent the months from the beginning of the fiscal year until January in completing a "Comprehensive Report on the Archeological Aspects of the Buggs Island Reservoir, Virginia and North Carolina." He left Washington on January 10, 1948, in company with Mr. Caldwell, for Augusta, Ga., where they conferred with the Resident Engineer of the Clark Hill project on the Savannah River. From Augusta they proceeded to Lincolnton, Ga., where they established headquarters, January 13, and proceeded to make a survey of the archeological remains of the area to be flooded by the Clark Hill Reservoir. During the course of this work they located 128 sites, 70 of which will be covered by water when the dam is completed. These sites included former village areas, camps, and stone-chipping stations, with a few mounds. Materials collected from the surface suggest the former presence of at least six sequent cultural groupings in the area, including a considerable number which possibly antedate the introduction of pottery making. Most of the sites are small and, as a result of long-continued cultivation and erosion, few have any depth. Three of them have been recommended for excavation. Two of the latter are representatives of the type of culture which has been named Stalling's Island, and the third is the Rembert Mound Group described by William Bartram in 1791 and partially excavated by C. C. Jones in 1878 and Cyrus Thomas in 1894 but never thoroughly studied. These mounds belong in the so-called Lamar period in the Southeastern cultural sequence.

Miller and Caldwell completed their work at Clark Hill on May 31 and returned to Washington. They spent the remainder of the fiscal year writing a preliminary report on the results of the survey and preparing recommendations and estimates for an excavation program in the basin.

Mr. Solecki left Washington on March 8, 1948, for Hinton, W. Va., where he established headquarters and began a survey of the Bluestone Reservoir basin on New River. He completed the preliminary reconnaissance on April 19 and left for Huntington, W. Va., to confer with the District Engineer, Corps of Engineers. En route he stopped at Charleston where, with the aid of Mrs. Roy Bird Cook, State Historian and Archivist, he checked the records and manuscripts in the History and Archives Department of West Virginia for possible information on the Indians and early Colonial settlers in the New River valley. He left Huntington on April 21, for Pittsburgh, Pa., stopping to examine some archeological sites at Moundsville, W. Va. At Pittsburgh he obtained information from the District Engineer, Corps of Engineers, about the proposed West Fork Reservoir in the Monongahela Basin in north-central West Virginia. From Pittsburgh he proceeded to the West Fork Reservoir area and made a preliminary reconnaissance of the area that ultimately will be flooded. This work was completed on May 6, and he returned to the Bluestone area for more intensive investigation of the remains occurring there.

Inasmuch as both of the reservoir projects surveyed by Mr. Solecki are in mountainous regions, most of the traces of Indian and Colonial occupation occur along the river bottoms. A total of 42 archeological sites were found in the Bluestone area. These include mound groups, village remains, rock shelters, one location where there are pictographs, and four Colonial forts. At two of the sites, where potsherds were found on the surface, Solecki did some test digging. The material thus obtained places the cultural horizon in late pre-Columbian times and indicates certain links between the Ohio Valley and the Great Valley of the Shenandoah. Test excavations were also made in the largest of the rock shelters where both historic and prehistoric objects were found, the latter occurring in the deposits to a depth of 5 feet. Because no previous archeological work has been done in this district the excavation of three of the village sites and the large rock shelter has been recommended. Solecki found 14 small sites, presumably places where transient hunting parties had camped, in the West Fork Basin. None of these are of sufficient size or depth to warrant further study and no additional work was recommended. The West Virginia surveys were completed on May 28 and Solecki returned to Washington where he spent the remainder of the fiscal year preparing reports on the results of his investigations.

Dr. Gordon R. Willey, archeologist on the regular staff of the Bureau of American Ethnology, was detailed to the River Basin Surveys during August and September. On August 14 he went to Nashville, Tenn., where he visited the office of the District Engineer for the purpose of obtaining information about the Center Hill project on the Caney Fork River near Baxter, Tenn. From there he proceeded to Baxter and from August 20 to September 12 carried on a survey of the area to be flooded. He found 39 sites consisting of temple mounds, small earth-rock mounds, villages, and caves showing some signs of occupation. Many of the sites proved to be Middle Mississippian in culture and period; some suggested that they belonged in the pre-Mississippian category, and others may even represent the Archaic. The Middle Mississippian designates the period when the people lived in large sedentary communities, depended primarily on intensive agriculture for their subsistence, built temple or substructure mounds, and made characteristic types of pottery and other artifacts. This generally is believed to have been about A. D. 1300 to 1700. Pre-Mississippian also has been called the Burial Mound period, or Southeastern Woodland culture. At that stage the people lived in smaller communities or scattered households, lived primarily by hunting, fishing, food gathering supplemented by a little agriculture. This was during the centuries from approximately A. D. 800 to 1300. The Archaic refers to small, scattered groups of primitive hunters and food gatherers who are believed to have occupied the area prior to A. D. 700. Excavations were recommended for one of the temple-mound sites and one of the earth-rock burial mounds, with testing in some of the village remains. Unfortunately flooding started before this could be accomplished, and the material obtained from the survey constitutes most of our knowledge of that portion of the Cumberland Basin.

After completing the survey at Center Hill, Dr. Willey proceeded to Knoxville, Tenn., where he discussed archeological problems with members of the Department of Anthropology at the University of Tennessee. From there he returned to Washington and prepared his report. He returned to his regular duties as a member of the Bureau staff on October 1.

Oklahoma.—David J. Wenner, Jr., was appointed field assistant on July 29, 1947, and proceeded to make a survey of the Hulah Reservoir basin on the Caney River in Oklahoma. The area to be inundated by this project is not large and he was able to cover it in a few days' time. He found four sites, all apparently camping places, and because of their meager nature, did not believe them worthy of further investigation. From the Hulah region he proceeded to the Fort Gibson Reservoir project on the Grand (Neosho) River. A rapid survey of that basin located 24 sites consisting of 1 mound group, 1 bluff shelter, and the remains of 22 villages or camps. All but three of the sites will be covered by water. The most important is the mound group known as the Norman site. It originally consisted of six earth mounds and a large surrounding village area. Some work was done in four of the lesser mounds a number of years ago by the University of Oklahoma. One of the two remaining mounds is the largest at the site and is connected to an adjacent low mound by a ramp. Small test excavations have been made in the low mound but the large one is virtually intact. It represents a stage of cultural florescence in the southern United States about which very little is known and may be comparable in scientific wealth to the famous Spiro mounds, located in an adjacent county, destroyed by treasure hunters some 15 years ago. Excavation of the Norman mound probably would provide information essential to dating the Spiro-type culture which presumably was the forerunner of the native Caddo culture of the southern Plains at the beginning of historic times. For this reason thorough investigation of the remaining manifestations at the Norman site was recommended.

Mr. Wenner completed his field investigations on August 15 and proceeded to Norman, Okla., where the University of Oklahoma provided him with facilities for studying the material collected and writing his reports. During the period of the surveys and the preparation of the reports, Dr. Robert E. Bell, of the Department of Anthropology at the University, assisted Mr. Wenner as an advisor and consultant. After completion of the work Mr. Wenner left the Surveys to return to college. He again joined the staff on June 28, 1948, and at the close of the fiscal year was engaged in making a survey of the Tenkiller Ferry Reservoir on the Illinois River in the eastern part of the State. Robert Shalkop and William Mayer-Oakes, student assistants, were aiding in this work.

Texas.—The River Basin Surveys in Texas continued to operate throughout the year from the base and headquarters supplied by the Department of Anthropology at the University of Texas, Austin. Excavations were completed at one project, the survey of another reservoir basin was brought to conclusion, and two others were started and finished.

At the beginning of the year Joe Ben Wheat, archeologist, was engaged in excavations at the Addicks Reservoir. This work was terminated on July 15. Mr. Wheat then proceeded to Austin where he studied the material he had collected and prepared a preliminary report covering both the results of his survey of the Addicks Basin and his excavations in two of the sites located there. He also wrote a paper "Archeological Survey of the Addicks Basin: A Preliminary Report" which was published in volume 18 of the Bulletin of the Texas Archeological and Paleontological Society. He resigned from the Surveys on August 15 in order to return to the university and complete his graduate work.

The excavations at the Addicks Reservoir proved interesting because they revealed a sequence of cultural stages extending from the era before pottery making and agriculture were introduced through succeeding centuries until the beginning of contact with European culture. The period covered is from about A. D. 900 to 1700. Who the people were is not known, but certain postulations may be made. At the time of the first French and Spanish explorations of the region the Akokisa band of the Atakapan occupied the area. Although little is known of the specific culture of this group, it is generally considered to have shared the general Atakapan culture extending into the lower Mississippi Valley. The archeological culture is of the same southeastern pattern, which may point to the Akokisa as being the pre-Columbian inhabitants of the Addicks district.

At the beginning of the fiscal year Robert L. Stephenson, archeologist, was making a reconnaissance of the Whitney Reservoir basin on the Brazos River north of Waco. This work continued until October 1, although August 2–4 he returned to Austin for the purpose of depositing material collected and of conferring with members of the Department of Anthropology at the University of Texas; August 30 to September 1 he visited the Spanish Fort and other sites in the central Red River area; and September 13–14 he went to a number of archeological locations near Waco, but outside the reservoir basin, for the purpose of gathering comparative data. On August 23 he made a 1½-hour flight over the entire Whitney area, successfully locating archeological sites from the air and obtaining a comprehensive understanding of the district as a whole. He returned to Austin on October 1 and spent most of the following 2 months studying the material collected and writing the preliminary report. He also prepared an article, "Archeological Survey of Whitney Basin," which was published in volume 18 of the Bulletin of the Texas Archeological and Paleontological Society.

During the course of his investigations Mr. Stephenson located and recorded 61 sites in the Whitney Basin. These consist of 14 rock shelters and 47 occupational areas in the open. Two fossil localities were also located. He recommended 32 sites for further testing and excavation. Such work should produce important evidence on the cultural complexes of that portion of Texas.

Mr. Stephenson left Austin on November 26 and went to Lincoln, Nebr., where he studied the field and laboratory methods being used by the Missouri Basin Survey group. While at Lincoln he also attended the Fifth Conference for Plains Archeology and presented a paper on the work which he had been doing in Texas. He returned to Austin on December 5 and on the 9th left to begin a survey of the Dam "B" Reservoir basin on the middle Neches River in the eastern part of the State. This work was completed on January 18, 1948, having been interrupted by a trip to the Whitney Reservoir where 3 days were spent in showing Dr. Theodore E. White, paleontologist, the bone deposits located earlier. While on this trip Mr. Stephenson located a large mound and accompanying village remains on the upper Neches River near Palestine, Tex. From Dam "B" he proceeded to the McGee Bend Reservoir on the lower Angelina River. Inclement weather, however, interfered with active work in the field, and most of the time until February 16 was devoted to studying local collections of artifacts, working on field notes, and on the report on the results of the Dam "B" investigations. During this interval he also went to Galveston, Tex., for a 3-day conference at the office of the District Engineer, Corps of Engineers, regarding the dates of beginning and completion of reservoir projects in all parts of Texas. The period from February 16 to April 15, except for 3 days (March 5-7) spent at Nacogdoches studying old records to obtain data on the early history of the area, was devoted to reconnaissance of the McGee Bend basin. When the survey was finished Mr. Stephenson returned to Austin and was occupied until the end of the year in preparing his reports on the Dam "B" and McGee Bend investigations.

In the survey of the Dam "B" area 12 sites were located, but none gave indication of being of sufficient importance to warrant further examination. Comparable material occurs both in the McGee Bend Basin and elsewhere in the region. Unless construction work should reveal subsurface deposits of archeological significance no additional work will be required at this reservoir and none was recommended. At McGee Bend 80 sites were located and recorded. Of this number, 8 are early and contain no pottery, 34 are early pottery sites of the Alto Focus (ca. A. D. 1000 to 1300), 22 are late pottery sites of Bossier, Belcher, and Frankston Foci (ca. A. D. 1450 to 1600), and 1 is a historic site. At many of these locations there are evidences of occupation through two or more cultural periods and they are important for that reason. Out of the group 31 sites have been recommended for further testing or more extended excavation.

New Mexico.—The only work done thus far in New Mexico consisted of the excavation of portions of two shallow rock-shelters 8 miles southeast of Tucumcari. The manifestations at that location, the Hodges site, were outside of the area directly involved by the Tucumcari project and were in no danger of destruction either by construction work or flooding. They were being dug, however, on week ends and holidays by workmen from the project and by settlers attracted to the district by the development of the irrigation program. In order to salvage as much as possible of what still remained, the excavations were initiated by Herbert W. Dick, temporary field assistant, who was employed by the Surveys for that purpose. Mr. Dick worked at the Hodges site from August 18 to 26. He found that both shelters contained a homogeneous lot of archeological material representing a late pre-Columbian cultural period in that part of the Southwest. On the basis of potsherds, found in association with the stone and bone artifacts, a late fourteenth or early fifteenth century dating is given to the archeological manifestations. After completing the digging Mr. Dick went to Albuquerque, N. Mex., where he processed the specimens and prepared a preliminary report on his findings.

While Mr. Dick was engaged at the Hodges site it was visited by Dr. Sheldon Judson who was completing a geological study of the San Jon, N. Mex., region for the Smithsonian Institution. Dr. Judson found that the lower deposits in the shelters contained interesting and helpful stratigraphy and from the evidence he obtained there was able to add another link in the "alluvial chronology" which he has established for that district, the chronology which promises to contribute much to the understanding of the complex history of the Late Pleistocene and subsequent periods in the Southwest. Because of this the Hodges site enjoys an importance out of all proportion to its antiquity and the archeological information which it produced.

Colorado.—Investigations in certain portions of Colorado are a part of the major program for the Missouri Basin, but there are a number of others which fall outside that drainage area and which are being conducted as separate units of the Surveys as a whole. These are in the Arkansas and Gunnison Basins. Later they will be expanded to the Colorado-Big Thompson projects and other tributaries of the Colorado.

Donald Eastman and Gary L. Yundt were appointed field assistants on June 7 and immediately began surveys at a number of reservoir basins in the Gunnison drainage. Brief preliminary investigations had been made at a number of these projects by Western State College, Gunnison, students under the direction of Dr. C. T. Hurst of that institution. Working in conjunction with Dr. Hurst and under his general direction, Eastman and Yundt completed the surveys of the Cottonwood, Cebolla, Gateview, and Almont reservoir areas and at the close of the year were engaged in a reconnaissance of the Taylor Lake project. The four basins where investigations were completed contained 16 sites consisting of both rock shelters and open camps. None appeared to be of sufficient importance to warrant recommendation for further study by the River Basin Surveys. However, Dr. Hurst and Western State College volunteered to take over such of the units as indicated the possibility of contributing some knowledge and assume responsibility for the additional work needed to obtain it.

Arnold M. Withers was appointed to the Surveys staff on June 13 as archeologist and on June 21 left Denver accompanied by W. W. Thompson and M. F. Sullivan, student assistants, to begin the reconnaissance of a number of reservoir projects in the mountains west of Pueblo. This work was going ahead at the close of the fiscal year. Mr. Withers and his associates used space made available by the Department of Anthropology of the University of Denver as their base of operations.

Missouri Basin.—The Missouri Basin project continued in full operation throughout the year. On July 1, three archeological surveys and one paleontological reconnaissance were under way and the headquarters and laboratory at Lincoln, Nebr., were actively engaged in processing data and specimens received from the field parties. Most of the activities were of a survey nature, but some digging was done at Birdshead Cave in the Boysen Reservoir, Wyo., at Medicine Creek Reservoir, Nebr., and at several paleontological sites in Wyoming. By the end of the first week in November weather conditions were such that it was necessary to stop explorations for the season and all regular personnel returned to Lincoln. From then until conditions again became favorable in the spring, the time was devoted to the study of materials and data collected and the preparation of reports. Field work was initiated March 29, 1948, when an extensive series of excavations was started at sites soon to be destroyed by construction operations at the Medicine Creek Dam in western Nebraska. This work was in accordance with an agreement with the Bureau of Reclamation whereby the River Basin Surveys provided the technical supervision and the Bureau of Reclamation furnished the necessary labor and equipment. This undertaking was still in progress at the end of the fiscal year. On June 1 one archeological party left Lincoln for the Angostura Reservoir, S. Dak., for further survey and excavation, and on June 3 another left for Heart Butte Reservoir, N. Dak., to begin similar activities. A paleontological party departed on June 1 for the

Boysen Reservoir area, Wyoming, to resume the collecting of fossil material. All three parties were at those respective locations at the end of the year.

The general results of the Surveys' findings in the Plains were outlined in the 64th Annual Report of the Bureau of American Ethnology and, although subsequent work added important details, need not be repeated. Some mention, however, should be made of the excavations carried on in the present year. Birdshead Cave, located near the base of the Owl Creek Mountains, in the Boysen Reservoir basin, Wyoming, contained several levels of aboriginal debris of occupation separated by layers of decomposed rock and dust. The artifacts recovered, although small in number, show significant differences from level to level. If these specimens can be correlated with those from some of the single-occupation sites in the basin, a task which was being attempted at the close of the year, it may be possible to arrange the latter in a sequential order and thus establish a relative chronology for the area. As a whole the material from upper levels of the cave suggests a late pre-Columbian occupancy by Indians from the Great Basin farther west rather than by people from the Plains. This introduces another set of problems pertaining to the interrelationships between two rather distinct groups over a long period of time. Further work in the area should throw light on the subject.

Excavations at the Medicine Creek Reservoir were carried on from September 5 to November 9, but little more than sampling was undertaken at that time. When the work was resumed in March, large-scale operations became possible through the labor and power machinery contributed by the Bureau of Reclamation. The use of heavy equipment ordinarily is frowned upon by archeologists. Because of the short time available for excavation before the sites were destroyed by construction activities and the lack of funds needed to hire large labor crews, however, it was deemed advisable to use bulldozers and highway-grading machinery to remove the overburden from buried village remains. The results obtained amply demonstrated the practicability and effectiveness of such equipment in uncovering archeological materials with a minimum of breakage, and wherever possible its use probably will be extended to other projects. At Medicine Creek entire sites were stripped of their sod or other cover, making it possible to observe the complete village plan, to study village patterns, and to discover small features not readily determinable by the usual hand-labor methods. From March 29 to June 30 the remains of 25 houses were uncovered, 37 cache pits located beneath their floors were investigated, 13 similar pits outside the houses were examined, and 13 middens were dug. Some 28,000 specimens including utensils made of pottery, tools of bone, stone, and shell, and the remains of various food stuffs such as animal bones, mussel shells and charred vegetal materials (corn, beans, seeds of sunflower, squash, and wild plum) were found. In a number of cases sections of wood in an excellent state of preservation were obtained from post holes in the house floors. These specimens are of value for determining the type of vegetation in the area hundred of years ago and possibly may furnish information for dating purposes.

Most of the remains in this district belong to the Upper Republican culture, so named because the first of the type studied and defined were located in the Republican River drainage of southern Nebraska. It is not possible at this time to correlate them with any of the known tribes, such as the Dakota, Pawnee, or Comanche, but this may be done later. Remains of this culture are believed to date from ca. A. D. 1200 to 1500. A few of the sites appear to belong to what has been called "Woodland" because of their close relationship to others east of the Missouri. Tentative dating places it in the centuries A. D. 500 to 1200. In addition there are traces of a primitive hunting people who inhabited the area several millennia earlier. There is no doubt that the work at Medicine Creek has added a large and important body of new data on the pre-Columbian inhabitants of western Nebraska and from it an unusually complete picture of life in the area should emerge. It seems evident that several long-held scientific theories regarding those people and their relationship to their environment will need to be revised. The information from Medicine Creek certainly will be one of the most significant contributions yet made to the study of Plains prehistory.

The paleontological work, under T. E. White, while not as important in some ways as the archeological investigations, is making a definite contribution to geology. This is particularly true in the Wind River Basin in Wyoming where data collected by the River Basin Surveys field party has aided in the identification of younger beds than previously had been supposed to be present in the area. Furthermore, no historical summary of paleontology in any of the river basins would be complete without consideration of the fragments of fossil bones and leaves frequently found by archeologists in Indian sites. These objects probably were collected as curiosities, although they occasionally were used as ornaments and sometimes attempts were made to work silicified bones into implements. While not of great significance to paleontology, they are a part of the story, and study of the material is helpful. Thus far 94 reservoir areas in the Missouri Basin have been examined either briefly or in some detail, and specimens have been collected from some 68. In a number of cases this material has helped to clarify understanding of the area and will provide useful data for future reference.

As during the previous year, Dr. Waldo R. Wedel, on detail to the River Basin Surveys from the Division of Archeology, United States

National Museum, was in charge of the program. He prepared general plans and coordinated all phases of the work, making numerous trips of inspection to the areas where surveys and excavations were in progress and supervising the work at Lincoln. He returned to his official station at Washington on October 31, but during the fall and winter months made regular monthly trips to Lincoln to check on the work being done at the field headquarters and laboratory and to assist, through advice and discussion, in the preparation of the reports on the summer's activities. He left Washington on May 26 for Lincoln and on his arrival there resumed active direction of the program for the field season.

J. Joseph Bauxar, archeologist, was at Chamberlain, S. Dak., at the beginning of the fiscal year with the party, under the direction of Paul L. Cooper, which was engaged in making a preliminary reconnaissance of the west side of the Missouri River in the Fort Randall Reservoir area. During the continuance of this work 82 sites were visited, and data on about 20 others were obtained from local people. On July 19 test digging was initiated in some of the more promising sites. The period from July 19 to August 20 was devoted to the examination of burials at the Wheeler Bridge mound site. These occurred in 2 low mounds. At one of these there were 12 bundle burials, and at the other 2, or possibly 3, of the same type. Inasmuch as there were no funerary offerings accompanying any of the burials and the material in the mounds was scarce, there was nothing to indicate possible cultural relationship for these remains. On August 20 Mr. Bauxar shifted his operations to the Pease Creek site where he opened an exploratory trench through a large refuse mound. Two definite occupation levels were noted there, and a large quantity of cultural material was recovered. The specimens suggest affiliation with either Upper Republican or prehistoric Arikara peoples. On September 17 investigations were started at another site which gave indications of a well-defined occupation level. Two trenches were dug at that location. They revealed a well-defined occupation level which extended below the plow zone. This work was completed on October 6, and attention was then turned to the Oldham site where two subsurface circular house floors were uncovered. These presumably belong to a late occupation which apparently was Arikara. Some slight evidence of an earlier Woodland occupation was also noted. A preliminary examination of all the data collected from the various sites investigated indicates a range of cultural types extending back from late historic Yankton through what possibly was early Arikara and even earlier Woodland.

Mr. Bauxar returned to Lincoln on November 6 and from then until April 4 was engaged in working up his material and in establishing an ethnohistory file for the Missouri Basin to be used as a ready reference by the staff in correlating archeological materials with those of known tribes. The Thwaites and Biddle editions of the Lewis and Clark journals and the Ordway journal were the sources examined for the desired information. A total of approximately 1,500 items pertaining to tribal locations, contacts, material culture, and other features were extracted from these journals. When this material has been prepared for filing under tribal and subject-matter headings, it probably will fill some 15,000 index cards.

From April 4 to June 26 Mr. Bauxar was on special assignment to the National Park Service for the purpose of conducting historical investigations at the Homestead National Monument in Gage County, Nebr. Five limited areas were examined, and a report on the excavations was prepared and submitted to the National Park Service, Region Two Office, at Omaha. Upon the completion of this detail Mr. Bauxar returned to the Lincoln headquarters and resumed his work on the ethnohistory project.

On July 1 Wesley L. Bliss, archeologist, was working with the field party under his direction at the Glendo Reservoir project in Platte County, Wyo. The survey of this area, started in the month of June, was completed on July 2, and having located a total of 43 sites the party moved the following day to Boysen Reservoir, in Fremont County, where further investigations were carried on until July 26. During this period tests were made in Birdshead Cave in the Owl Creek Mountains about 5 miles west of the dam site. This cave showed six levels of occupation, and prospects for obtaining interesting information about the aboriginal inhabitants of the area were so promising that plans were made to return to it later in the season. On July 27 the party moved to the Oregon Basin project in Park County where it continued reconnaissance work, locating additional sites which increased the total for the basin to 28, and did some test digging in two rock shelters. August 11 it moved to the Canyon Ferry Reservoir near Helena, Mont. Investigations there added to the number of sites located during the preliminary examination of the area in 1946, making a total of 31. The work there was completed on August 26, and attention was turned to the proposed Tiber Reservoir near Shelby, Mont., where work continued until September 9. During this period Mr. Bliss and his party spent 4 days traveling by boat in order to locate and examine sites exposed along the river-cut terraces. These sites could not be reached by land and were not visited during the preliminary reconnaissance made the previous year. Additional sites located bring the total for Tiber to 53. Leaving this area, Mr. Bliss returned to the Boysen Reservoir and from September 11 to November 6 completed excavation of the Birdshead Cave and did some test digging in other sites. He returned to Lincoln on November 8 and from then until the end of the fiscal year was engaged in laboratory work and the preparation of supplementary reports on the Glendo, Boysen, and Canyon Ferry projects. He also wrote a "Summary Report on the Archeology of the Wyoming-Montana River Basin Surveys of 1947—with Comments on Smokey Hill and Republican River Sub-basins in Kansas and Nebraska." Mr. Bliss presented two papers at the Fifth Conference for Plains Archeology in November. One of these summarized the results of the archeological surveys in Wyoming and Montana and the other discussed the subject of Early Man in the northwest Plains. Mr. Bliss also attended the joint meeting of the American Anthropological Association and the Society for American Archeology at Albuquerque, N. Mex., in December, and presented a paper dealing with archeological problems in the western Plains.

As previously stated, Paul L. Cooper was in charge of a survey party which at the beginning of the fiscal year was operating in the Fort Randall Reservoir area in South Dakota. On July 12 and 13 Mr. Cooper attended a field conference of workers in upper Missouri River archeology at Bismarck, N. Dak., and from there he accompanied Dr. Waldo R. Wedel, field director of the River Basin Surveys, and Dr. Jesse D. Jennings, National Park Service archeologist, on an inspection trip to a site which was being excavated by the University of North Dakota near Fort Yates, N. Dak. From there he returned to Lincoln and until August 4 worked on a preliminary report on the archeological resources of the Fort Randall Reservoir. On August 6, after conferring for 2 days with personnel of the Corps of Engineers in Omaha and with the Director of the University of South Dakota Museum at Vermillion, Mr. Cooper returned to the Fort Randall field unit which had been under the direction of Mr. Bauxar during his absence. From then until October 28 he remained with the field party and participated in the investigations already discussed in connection with Mr. Bauxar's activities. He then returned to Lincoln to take charge of the field headquarters upon the departure of Dr. Wedel for Washington.

Mr. Cooper continued this supervision, which was both technical and administrative, throughout the fall and winter months during the periods when Dr. Wedel was in Washington. He made several trips to Omaha and Denver for the purpose of consulting with officials of the National Park Service, the Corps of Engineers, and the Bureau of Reclamation. As time permitted, the data collected during the field season were summarized preparatory to the writing of technical reports, and preliminary reports were prepared on certain phases of the field work. He also participated in the Fifth Conference for Plains Archeology, presenting a paper summarizing the field work and discussing pottery types found in certain districts in the Plains area. In May Mr. Cooper represented the Missouri Basin project of the River

Basin Surveys at the annual session of the Nebraska Academy of Sciences and read a paper explaining and summarizing the activities of the Surveys. On June 3 Mr. Cooper left Lincoln for North Dakota. Two days were spent en route in conferring with personnel at the University of South Dakota Museum. Arriving at the Heart Butte Reservoir project on the Park River in North Dakota, Mr. Cooper initiated reconnaissance work and started some test excavations in a site not far above the location for the dam. These investigations were in progress at the close of the fiscal year.

Robert B. Cumming, Jr., archeologist, continued to serve as the laboratory supervisor at the Lincoln headquarters. He planned and directed the procedures for processing specimens, photographic negatives and prints, the preparation of maps and diagrams for the reports, the typing of manuscripts and cutting of stencils, and the general maintenance of equipment. During the course of the year 37,406 specimens were cleaned, repaired if necessary, numbered, cataloged, and stored. Since the beginning of the project 59,306 specimens have been processed. Over 830 photographic negatives and their prints were added to the files, bringing the total to 1,256. Approximately 100 kodachrome positives were cataloged, making 179 now available for use in illustrating talks about the program. During the year Mr. Cumming established a file for photographic enlargements suitable for publicity purposes and one for lantern slides. Reference maps and aerial photographs were indexed and filed, 835 of the former and 277 of the latter now being available for use by the staff. In addition Mr. Cumming assisted in and supervised the mimeographing and assembling of reports issued during the year. These consisted of 10 preliminary archeological reports, 5 supplementary archeological reports, and 2 paleontological reports. He also carried on the project inventory and requisitioning of supplies throughout the year. During such times as the field director and acting director were away from Lincoln he was in charge of the field office.

From July 1 to November 7, Jack T. Hughes, archeologist, assisted Wesley L. Bliss in Wyoming and Montana, where he participated in reconnaissance and survey of several reservoir basins. From November 8 to May 30 he worked in the office at Lincoln where he aided in the preparation of various reports on the field work of the 1947 season. He wrote two reports entitled "Supplementary Appraisal of the Archeological Resources of Oregon Basin Reservoir, Park County, Wyoming" and "Supplementary Appraisal of the Archeological Resources of Tiber Reservoir, Toole and Liberty Counties, Montana." He also prepared the following section of a report entitled "Archeology of Birdshead Cave, Fremont County, Wyoming": Introduction, site, locale, occupation, and complexes, as well as parts of those on remains and conclusions. During this period Mr. Hughes also devoted some of his time to an analysis of the archeological materials in the collection of the Nebraska State Historical Society from the Barn Butte site on the North Platte River in Garden County, Nebr., in the preparation of a report on this site; the preparation of a table showing proposed correlations of geological, climatological, and archeological events at several selected sites in the western United States; and in the preparation of a report on stonework terminology for the Nomenclature Committee of the Conference for Plains Archeology.

Mr. Hughes left Lincoln on June 1 for the Angostura Reservoir in South Dakota where, with J. M. Shippee, field assistant, he began a reconnaissance and intensive survey of the area to be flooded. This work was in progress at the close of the year.

At the start of the fiscal year, Marvin F. Kivett, archeologist, was in charge of a party engaged in an archeological reconnaissance of the proposed Garrison Reservoir in northwest North Dakota. This reconnaissance included surface survey and limited test excavations in a number of the more important of the 70-odd known sites located in and adjacent to the reservoir. These sites include permanent earthlodge villages, buried occupational zones, burial locations, and numerous tipi-ring groups. The reconnaissance was terminated at Garrison on August 20, and the party transferred its attention to the Baldhill Reservoir on the Sheyenne River, where a brief reconnaissance was carried on from August 22 to August 28. This resulted in the location of 10 archeological sites, 7 of which were occupational areas and 3 were mound groups. All the occupational sites yielded some pottery, while one mound tested yielded four disarticulated burials. The party returned to the River Basin Surveys Laboratory in Lincoln on August 29.

On September 5 Mr. Kivett went to the Medicine Creek Reservoir, Frontier County, Nebr., to do some test digging at several previously located sites. Four pit-house floors, located in two village sites attributable to a variant of the Upper Republican complex, were excavated, and an occupational area located on a low terrace near the mouth of Lime Creek was tested by means of trenches. The latter site presumably is a variant of the Woodland pattern. This work was terminated on November 9 because of inclement weather, and Mr. Kivett returned to Lincoln.

During the period November 10 to March 27 Mr. Kivett prepared preliminary archeological reports for the Baldhill and Garrison Reservoirs in North Dakota, and the proposed Davis Creek Reservoir in Nebraska. He also worked on a technical paper dealing with a shell-bead ossuary excavated during the fall of 1946 on Prairie Dog Creek, Phillips County, Kans., near the upper limits of the Harlan County Reservoir.

On March 28 Mr. Kivett returned to the Medicine Creek Reservoir to begin an extensive excavation program. During the period March 29 to June 30, three village sites on or near the dam axis were excavated, and digging was started at the remains of a fourth village a short distance above the dam in the reservoir basin. This work included the uncovering of 25 house floors, the recovery of 2 burials, and extensive excavations in midden areas associated with the house floors. Power machinery, furnished by the Bureau of Reclamation, was used primarily for removing the sterile overburden covering most of the area, for the removal of refuse dirt, and for digging exploratory test trenches. The bulk of the materials recovered appear to be attributable to the Upper Republican aspect. At the close of the fiscal year the work was continuing, with attention being directed toward a series of small sites on the right bank of the reservoir basin approximately 1 mile above the dam axis.

George Metcalf was appointed field assistant on September 25 and proceeded immediately to the Medicine Creek Reservoir where he joined Marvin F. Kivett in the excavation being conducted there. He returned to Lincoln on November 9 and from then until March 28, when he again went to Medicine Creek, he devoted his time to classifying, studying, and writing a technical paper on the specimens collected during the field work. This report included not only the material obtained by the River Basin Surveys party, but also that secured by a group from the Nebraska State Historical Society which had excavated several house sites in the area during the summer. Mr. Metcalf's manuscript will be incorporated into the major report on the Medicine Creek investigations. On June 30 he was in charge of a portion of the work at Medicine Creek.

J. M. Shippee, field assistant, was with the Bliss party from July 1 to November 8. After his return to Lincoln he devoted the time in the laboratory to work on the specimens from Birdshead Cave, the sorting and classifying of artifacts from other localities, and the preparation of maps. He left Lincoln on June 1 with the Hughes party and was participating in the surveys at Angostura Reservoir at the end of the year.

Dr. Theodore E. White, paleontologist, was occupied in paleontological reconnaissance from July 1 to September 19. In the course of this work he visited 7 reservoir areas in Nebraska, 23 in Wyoming, and 25 in Montana. This phase of his investigations was interrupted from August 21 to September 11 while he dug the skull and several vertebrae of a dinosaur from the Jurassic Morrison beds in the Middle Fork Reservoir area in northeastern Wyoming. Dr. White returned to the Lincoln office on September 20 and spent the time until October 8 preparing preliminary reports on the reservoir projects examined during the summer. He then left for the Rocky Ford and Philip

Reservoir areas in South Dakota and from there proceeded to the Boysen Reservoir in Wyoming where he initiated a survey of the area to be inundated by that project. While in the Boysen Basin he collected a number of specimens of fossil mammals and a large soft-shelled turtle. He returned to Lincoln November 7 and from then until January 6 devoted his time to writing reports and consulting geological literature for information bearing on the reservoir areas.

Leaving Lincoln, Dr. White went to Texas where, from January 9 to 29, he made a paleontological reconnaissance of the Whitney Reservoir basin on the upper Brazos River. From there he returned to Washington, D. C., and from February 2 to May 15 worked in the United States National Museum identifying osteological material obtained from archeological sites, examining specimens, consulting geological literature relative to the reservoir areas in the Missouri Basin and Texas, and preparing reports. He then went to the Lincoln office and devoted the period from May 18 to June 1 making preparations for the summer's field activities. He left Lincoln on June 1 for the Boysen Reservoir where he resumed the investigations interrupted by the onset of bad weather the previous autumn. From June 4 to June 30 he collected a number of specimens of fossil mammals and reptiles and made extensive notes on the structure and stratigraphy of the area.

A number of student assistants were employed during the year as members of the various field parties. Robert L. Hall and Warren Wittry were with the Cooper party in South Dakota from July 1 to September 10, when they returned to college. Both men again joined Mr. Cooper on June 22 and were working with him at the Heart Butte Reservoir at the end of the fiscal year. Gordon F. McKenzie, John L. Essex, and Leo L. Stewart were with Marvin F. Kivett at the Garrison and Baldhill Reservoir projects in North Dakota at the beginning of the fiscal year. Mr. Stewart left the party on August 20, and Mr. Essex and Mr. McKenzie terminated their employment on August 30 following the return to the Lincoln headquarters. H. G. Pierce was with the Bliss party in Wyoming and Montana from July 1 to September 10. John C. Donohoe assisted Dr. Theodore E. White from July 1 to September and again joined him on June 14 for work in the Boysen Reservoir. Ernest Lundelius joined the staff on June 1 and left Lincoln with Dr. White when he started for Wyoming. Both he and Mr. Donohoe were with the White party at the close of the year.

Pacific Coast area.—During the fiscal year the River Basin Surveys project in the Pacific Coast region carried out investigations of the archeological and paleontological resources in 14 reservoir areas in the Columbia Basin, and in 7 reservoir areas in central California. The results of this work were described in reports prepared for mimeographing and limited distribution. A total of 180 sites were found in the Columbia Basin reservoirs, including sites of major and minor importance, and a total of 80 in those in California.

Dr. Philip Drucker, detailed from the regular staff of the Bureau to serve as field director, was in charge of activities in this area. During the period from July 1 to September 30 he made field headquarters at Eugene, Oreg., utilizing office space made available to the Surveys by the Department of Anthropology of the University of Oregon. He divided his time about equally between the Eugene office, where he planned the survey work and carried out the routine necessary for its operation, and the field, where he at times accompanied the survey parties, and checked on the results of their investigations. At the end of September he departed for Washington, D. C., having closed the field headquarters for the winter. In Washington he prepared the reports previously mentioned on the basis of the data collected by the field parties, in addition to his activities as a member of the staff of the Bureau of American Ethnology.

On May 13 he left Washington for the Pacific Coast, stopping en route at Milwaukee, Wis., for the purpose of conferring with the Committee for the Recovery of Archeological Remains which met in that city on the 14th and of participating in a symposium on the River Basin Surveys program. He arrived at Portland, Oreg., where he conferred with the officials of the Columbia Basin Recreational Survey Office concerning the status of various reservation projects of the Bureau of Reclamation and the Corps of Engineers in the Columbia Basin. On May 18 he arrived in Eugene, Oreg., where he completed arrangements for office and laboratory space at the Department of Anthropology of the University of Oregon. From May 20 to 28 he conferred with officials of the Region Four Office of the National Park Service at San Francisco on plans for the field season, and also with representatives of the departments of anthropology at the University of California, Berkeley, University of California at Los Angeles, and the University of Washington. As the result of these conferences, arrangements were made for two cooperative programs of research. The Department of Anthropology of the University of Washington arranged to put a party in the field under the direction of a member of the River Basin Surveys staff, to make an intensive survey and preliminary testing of the Potholes (O'Sullivan) Reservoir area in eastern Washington. The corresponding department at the University of California arranged to undertake investigations during the latter part of the summer in reservoirs in the upper San Joaquin drainage that had previously been examined by the survey.

During the month of June Dr. Drucker was occupied with planning the itineraries of survey field parties and obtaining the necessary personnel and equipment for them. On June 28 the parties were assembled, given the necessary instructions, and sent into the field. At the close of the fiscal year Dr. Drucker was at the field headquarters in Eugene.

Franklin Fenega and Clarence E. Smith, archeologists, had just commenced their field work at the beginning of the fiscal year. During the month of July they investigated three reservoir areas in the Willamette River drainage, the Detroit, Dorena, and Meridian, in Oregon. From there they proceeded to the site of the McNary Reservoir on the Columbia River just upstream from Umatilla, Oreg., and Plymouth, Wash., where they continued investigations for the remainder of the summer. All these reservoirs are Corps of Engineers projects. McNary Reservoir they found to be extremely rich in archeological remains, and after the preliminary reconnaissance survey had been completed on August 20, they carried out an intensive survey to establish which of the many sites found would most fruitfully reward excavation. On the basis of their intensive survey it was possible to make recommendations for the excavation of five groups of sites. On completion of the field work they summarized their field data, and submitted a preliminary report. Mr. Fenega resigned from the River Basin Surveys on September 22 in order to return to his academic work at the University of California. Mr. Smith was transferred to temporary headquarters at Berkeley, Calif., on the 22d, and carried out surveys at the following reservoirs in California: Dry Creek, Monticello, Kelsey Creek, Indian Valley, Sly Park, and Wilson Valley. On December 17 he resigned from the Surveys to resume academic work at the University of California.

Richard D. Daugherty, archeologist, and Francis A. Riddell, field assistant, were also just starting field work at the beginning of the fiscal year. During the remainder of the field season they examined the following reservoir areas: Cascade, Smith's Ferry, Scrivers Creek, Garden Valley in Idaho; Equalizing, Long Lake, and Potholes (O'Sullivan) in Washington; Anderson Ranch and Palisades in Idaho; and Hungry Horse in Montana; all projects of the Bureau of Reclamation. The greatest wealth of archeological remains they found to occur in the Bureau of Reclamation's Columbia Basin project, comprising Equalizing, Long Lake, and Potholes (O'Sullivan) Reservoirs. Both men resigned from the River Basin Surveys staff on September 24, having completed the preliminary reports on their field investigations for the season. On June 15, Mr. Daugherty was reappointed to the River Basin Surveys staff and was put in charge of the cooperative project arranged with the Department of Anthropology of the University of Washington. On June 19 he departed for the field with his crew and established a field camp in the Moses Lake area. At the end of the fiscal year he was still in the field in that location, Mr. Riddell was reappointed to the River Basin Surveys staff as field assistant on July 28 and departed with other members of the survey crew to begin an investigation at Benham Falls Reservoir in eastern Oregon.

George L. Coale, archeologist, Harry S. Riddell, Jr., field assistant, and Douglas Osborne, field assistant, joined the staff of River Basin Surveys on June 28 and proceeded to Benham Falls Reservoir to begin the season's survey work there.

Albert D. Mohr and William S. King, who had assisted Clarence E. Smith during October and November, were employed by the River Basin Surveys temporarily as field assistants during the period May 16–21 to carry out an investigation of the Mariposa Reservoir basin on Mariposa Creek on the east side of the San Joaquin Valley in central California. Only three small sites were located and none were recommended for further investigation.

Cooperating institutions.—State and local institutions have contributed to the River Basin Surveys program in various ways. In addition to furnishing space for field offices and laboratories as at the University of Nebraska, the University of Texas, the University of Denver, Western State College, the University of California, and the University of Oregon, universities and local institutions in some cases have joined forces with the Surveys for cooperative projects and in others have taken over units in the survey program. As previously mentioned, the excavation project at the O'Sullivan Reservoir in Washington was a cooperative undertaking between the University of Washington and the River Basin Surveys. This also was true for the surveys in western Colorado where members of the Surveys staff worked with field parties from Western State College at Gunnison.

During the year the University of Kentucky made surveys at the Wolf Creek Reservoir on the Cumberland River, and at the Dewey Reservoir on Johns Creek in the Big Sandy River drainage. In addition, the University conducted excavations at the Wolf Creek Reservoir and furnished the River Basin Surveys with a detailed report on its activities. The University of Georgia established surveys in the Chattahoochee and Flint River basins and did some excavation work in areas which will be inundated. The Alabama Museum of Natural History did reconnaissance work and some digging. The Florida Park Service took over the survey of the area in Florida which will be flooded by the construction of the Woodruff Dam on the Apalachicola River near Chattahoochee. The University of Tennessee made a survey of the Stewarts Ferry Reservoir basin on Stones River and did preliminary reconnaissance at the Harpeth River project. It also made arrangements for some salvage work at the Center Hill Reservoir where the impounding of water began too soon for the River Basin Surveys to do more than make a reconnaissance and recommend the excavation of certain sites. The University of Missouri, in cooperation with the Missouri Archeological Society, made surveys in the Bull Shoals, Clearwater, Pomme de Terre, Joanna, Table Rock, and Waco Reservoirs, and carried on excavations in key sites at Bull Shoals and Clearwater. The University of Oklahoma did some excavation work in a village site which will be flooded by the Fort Gibson Reservoir on the Grand (Neosho) River. The University of Kansas did survey work and started excavations at a village site in the Kanapolis River basin on the Smoky Hill River in Kansas. In Nebraska the State Historical Society carried on excavations at archeological sites in the Medicine Creek Reservoir area outside the Federally acquired lands adding important supplemental information on remains beyond the localities being worked by the River Basin Surveys. The Laboratory of Anthropology of the University of Nebraska excavated in two important sites in the Harlan County Reservoir area on the Republican River in the southern part of the State. The University of Nebraska State Museum carried on paleontological work near the Medicine Creek Dam site and on Lime Creek, a tributary of Medicine Creek, where important information was obtained on some of the earliest cultural remains thus far found in North America. The Museum also collected paleontological material from the Harlan County Reservoir. The University of North Dakota, in cooperation with the North Dakota Historical Society, carried on excavations at the Heart Butte Reservoir, on the Heart River, in the summer of 1947, and at the Baldhill Reservoir on the Sheyenne River beginning June 21, 1948. The University of Colorado made a preliminary reconnaissance of the 8 reservoir areas comprising the Colorado-Big Thompson project, while the University of Denver made brief surveys of 12 reservoir basins comprising the Blue-South Platte project. Western State College of Colorado did preliminary work in nine reservoir basins of the Gunnison-Arkansas project. The Museum of Northern Arizona, at Flagstaff, assumed responsibility for surveys at the Alamo project on Williams River in the western part of the State, but had not started investigations at the end of the year. The Archeological Surveys Association of Southern California, sponsored by a number of museums in that area, completed surveys in eight proposed reservoir and flood-control projects in that portion of the State. The University of California, at Berkeley, took over responsibility for the excavation of key sites located by the River Basin Surveys in the Pine Flat Reservoir on King's River and in the Isabella Reservoir on Kern River. Actual operations had not yet gotten under way, however, by June 30.

Progress reports and completed reports prepared by the cooperating organizations are sent to the River Basin Surveys so that the results of their investigations may be coordinated with the over-all program. All the information obtained by these groups thus becomes a part of the general record of the River Basin Surveys.

EDITORIAL WORK AND PUBLICATIONS

There were issued 1 Annual Report, 2 Bulletin volumes (Handbook of South American Indians), and 4 Publications of the Institute of Social Anthropology as listed below:

Sixty-fourth Annual Report of the Bureau of American Ethnology, 1946–1947, 30 pp.

Bulletin 143. Handbook of South American Indians. Julian H. Steward, editor. Volume 3, The Tropical Forest tribes. 986 pp., 126 pls., 134 figs., 8 maps. Volume 4, The Circum-Caribbean tribes, 609 pp., 98 pls., 79 figs., 11 maps.

Institute of Social Anthropology Publ. No. 4. Cultural and historical geography of Southwest Guatemala, by Felix Webster McBryde. 184 pp., 48 pls., 2 figs., 25 maps.

Institute of Social Anthropology Publ. No. 5. Highland communities of Central Peru: A regional survey, by Harry Tschopik, Jr. 56 pp., 16 pls., 2 maps.

Institute of Social Anthropology Publ. No. 6. Empire's children: The people of Tzintzuntzan, by George M. Foster. 297 pp., 16 pls., 36 figs., 2 maps.

Institute of Social Anthropology Publ. No. 7. Cultural geography of the modern Tarascan area, by Robert C. West. 77 pp., 14 pls., 6 figs., 21 maps.

The following publications were in press at the close of the fiscal year:

Bulletin 143. Handbook of South American Indians. Julian H. Steward, editor. Volume 5, The comparative ethnology of South American Indians. Volume 6, Physical anthropology, linguistics, and cultural geography of South American Indians.

Institute of Social Anthropology Publ. No. 8. Sierra Popoluca speech, by Mary L. Foster and George M. Foster.

Institute of Social Anthropology Publ. No. 9. The Terena and the Caduveo of Southern Mato Grosso, Brazil, by Kalervo Oberg.

Institute of Social Anthropology Publ. No. 10. Nomads of the Long Bow: The Siriono of Eastern Bolivia, by Allan R. Holmberg.

Publications distributed totaled 25,037 as compared with 8,205 for the fiscal year 1947.

LIBRARY

Accessions in the library of the Bureau totaled 145 volumes, bringing the total accession record as of June 30, 1948, to 34,607.

ILLUSTRATIONS

Work on the restoration of Indian photographs consumed the greater part of the year. The rest of the time was spent on work for the editors and on the preparation of maps and illustrations for Bureau publications.

ARCHIVES

Ever-increasing use is being made of the manuscript and photographic collections of the Bureau. Cards for the manuscript catalog, compiled for publication, have been typed and assembled. Upon completion of this project, a similar catalog of the photographic negatives in the Bureau collection, was begun. Approximately 2,600 cards for this catalog were typed by the end of the fiscal year.

The Bureau also put into operation its new filing system of photographic prints, the first installment of 30 albums having been acquired for prints from newly restored negatives. Each print is labeled with information pertinent to the subject. Full biographical data is furnished where possible in the case of portraits, so that the information is easily accessible to inquirers. At the close of the fiscal year, approximately 200 new file prints have been thus filed. Prints for the duplicate reserve file also have been labeled and filed with protecting paper between the prints. Requests for pay orders exceeded 300 prints during the year.

Up to July 1, 1948, 200 restorations of old negatives were completed. This necessitated the making of 200 11- by 14-inch enlargements, 200 mountings, 200 8- by 10-inch negatives, and 600 8- by 10-inch file prints. In addition to the restoration program, the Bureau photographer filled requisitions for 53 negatives, 988 prints, and 807 enlargements.

COLLECTIONS

Collections transferred by the Bureau of American Ethnology to the United States National Museum during the fiscal year were as follows:

Accession No.	*Collection*
177,085.	1 skeleton of an Indian child, 2–3 years old, from near Lela, Wheeler County, Tex.
177,393.	1 skull and 4 cervical vertebrae of a dinosaur. Collected by Dr. Theodore E. White 12½ miles west of Kaycee, Johnson County, Wyo.
178,819.	Archeological material collected at Cerro de las Mesas, Veracruz, México, 1941, by the National Geographic Society-Smithsonian Institution Expedition under the direction of Dr. M. W. Stirling.
178,831.	3 Miocene specimens from the Canyon Ferry Reservoir area in Montana; and 6 Eocene specimens from the Boysen Reservoir area in Wyoming. Collected by Dr. T. E. White and John C. Donohoe.
178,942.	538 specimens of archeological material collected by Dr. Gordon R. Willey from the Center Hill Reservoir on Caney Fork River, DeKalb County, Tenn.
179,088.	2 mollusks from Medicine Creek, Nebr.

MISCELLANEOUS

During the year Dr. Antonio J. Waring of Savannah, Ga., was made a collaborator of the Bureau of American Ethnology, while Miss Frances Densmore and Dr. John R. Swanton continued as collaborators.

During the course of the year information was furnished by members of the Bureau staff in reply to numerous inquiries concerning the American Indians, both past and present, of both continents. Various specimens sent to the Bureau were identified and data on them furnished for their owners.

Respectfully submitted.

M. W. Stirling, *Director.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

APPENDIX 6

REPORT ON THE INTERNATIONAL EXCHANGE SERVICE

Sir: I have the honor to submit the following report on the activities of the International Exchange Service for the fiscal year ended June 30, 1948.

The Smithsonian Institution is the official United States agency for the exchange with other nations of governmental, scientific, and literary publications. This exchange is carried on throughout the world under various conventions, treaties, and other international agreements.

The number of packages received for transmission during the year was 760,119, an increase over the previous year of 56,321. The weight of these packages was 812,189 pounds, an increase of 38,214 pounds. The average weight of the individual package is approximately 1 pound, 1 ounce, as compared with the average of the previous year of 1 pound, 2 ounces—an indication that the institutions are shipping less of the material that was held during the war. The material received from both foreign and domestic sources for distribution is classified as shown in the following table:

	Packages		Weight	
	Number	*Number*	*Pounds*	*Pounds*
United States parliamentary documents sent abroad	346, 768		163, 262	
Publications received in return for parliamentary documents		3, 230		6, 993
United States departmental documents sent abroad	186, 020		224, 063	
Publications received in return for departmental documents		3, 192		12, 034
Miscellaneous scientific and literary publications sent abroad	198, 635		346, 645	
Miscellaneous scientific and literary publications received from abroad for distribution in the United States		22, 274		59, 192
Total	731, 423	28, 696	733, 970	78, 219
Grand total	760, 119		812, 189	

The packages are forwarded partly by mail direct to the addressees and partly by freight to the foreign exchange bureaus. The number of boxes shipped to the foreign exchange bureaus was 3,107, an increase of 529. Of the boxes shipped 533 were for depositories of full sets of the United States Government documents furnished in exchange for the official publications of foreign governments for deposit in the Library of Congress. The number of packages forwarded by mail was 197,355.

The first shipments of exchange publications to the Japanese Exchange Bureau, under the jurisdiction of the National Library of Japan (the former Imperial Library), were made during the year.

In spite of the fact that considerable savings in transportation cost were effected by exporting from Baltimore instead of New York, and in spite of the advantage gained through special arrangements for shipments to Germany, the allotment for transportation was practically exhausted by the end of March 1948. Therefore, it was necessary to curtail shipments sharply during the last 3 months of the fiscal year 1948, which resulted in a backlog at the end of the year of approximately 225,000 pounds.

Consignments are now forwarded to all countries except Rumania, with which country negotiations were continued through diplomatic channels to effect the resumption of normal exchange relations.

FOREIGN DEPOSITORIES OF GOVERNMENTAL DOCUMENTS

The number of sets of United States official publications received by the Exchange Service to be sent abroad in return for the official publications sent by foreign governments for deposit in the Library of Congress is 94 (57 full and 37 partial sets). The Bulgarian Bibliographical Institute has been added to the list as the official depository of Bulgaria.

DEPOSITORIES OF FULL SETS

ARGENTINA: Dirección de Investigaciones, Archivo, Biblioteca y Legislación Extranjero, Ministerio de Relaciones Exteriories y Culto, Buenos Aires.
AUSTRALIA: Commonwealth Parliament and National Library, Canberra.
    NEW SOUTH WALES: Public Library of New South Wales, Sydney.
    QUEENSLAND: Parliamentary Library, Brisbane.
    SOUTH AUSTRALIA: Public Library of South Australia, Adelaide.
    TASMANIA: Parliamentary Library, Hobart.
    VICTORIA: Public Library of Victoria, Melbourne.
    WESTERN AUSTRALIA: Public Library of Western Australia, Perth.
AUSTRIA: National Library of Austria, Vienna.
BELGIUM: Bibliothèque Royale, Bruxelles.
BRAZIL: Instituto Naçional do Livro, Rio de Janeiro.
BULGARIA: Bulgarian Bibliographical Institute, Sofia.[1]
CANADA: Library of Parliament, Ottawa.
    MANITOBA: Provincial Library, Winnipeg.
    ONTARIO: Legislative Library, Toronto.
    QUEBEC: Library of the Legislature of the Province of Quebec.
CHILE: Biblioteca Nacional, Santiago.
CHINA: Ministry of Education, National Library, Nanking, China.
    PEIPING: National Library of Peiping.
COLOMBIA: Biblioteca Nacional, Bogotá.

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[1] Added during the year.

Costa Rica: Oficina de Depósito y Canje Internacional de Publicaciones, San José.
Cuba: Ministerio de Estado, Canje Internacional, Habana.
Czechoslovakia: Bibliothèque de l'Assemblée Nationale, Prague.
Denmark: Kongelige Danske Videnskabernes Selskab, Copenhagen.
Egypt: Bureau des Publications, Ministère des Finances, Cairo.
Estonia: Riigiraamatukogu (State Library), Tallinn.
Finland: Parliamentary Library, Helsinki.
France: Bibliothèque Nationale, Paris.
Germany: Offentliche Wissenschaftliche Bibliothek, Berlin.[2]
Great Britain:
  England: British Museum, London.
  London: London School of Economics and Political Science. (Depository of the London County Council.)
Hungary: Library of Parliament, Budapest.[3]
India: Imperial Library, Calcutta.
Ireland: National Library of Ireland, Dublin.
Italy: Ministerio della Publica Istruxione, Rome.
Japan: National Library of Japan, Tokyo.
Mexico: Secretaría de Relaciones Exteriores, Departamento de Información para el Extranjero, Mexico, D. F.
Netherlands: Royal Library, The Hague.
New Zealand: General Assembly Library, Wellington.
Northern Ireland: H. M. Stationery Office, Belfast.
Norway: Universitets-Bibliothek, Oslo. (Depository of the Government of Norway.)
Peru: Sección de Propaganda y Publicaciones, Ministerio de Relaciones Exteriores, Lima.
Philippines: National Library, Manila.
Poland: Bibliothèque Nationale, Warsaw.
Portugal: Biblioteca Nacional, Lisbon.
Rumania: Academia Română, Bucharest.[2]
Spain: Cambio Internacional de Publicaciones, Avenida Calvo Sotelo 20, Madrid.
Sweden: Kungliga Biblioteket, Stockholm.
Switzerland: Bibliothèque Centrale Fédérale, Berne.
Turkey: Department of Printing and Engraving, Ministry of Education, Istanbul.
Union of South Africa: State Library, Pretoria, Transvaal.
Union of Soviet Socialist Republics: All-Union Lenin Library, Moscow 115.
  Ukraine: Ukrainian Society for Cultural Relations with Foreign Countries, Kiev.
United Nations: Library of the United Nations, Geneva, Switzerland.
Uruguay: Oficina de Canje Internacional de Publicaciones, Montevideo.
Venezuela: Biblioteca Nacional, Caracas.
Yugoslavia: Ministère de l'Education, Belgrade.

DEPOSITORIES OF PARTIAL SETS

Afghanistan: Library of the Afghan Academy, Kabul.
Bolivia: Biblioteca del Ministerio de Relaciones Exteriores y Culto, La Paz.
Brazil:
  Minas Geraes: Directoria Geral e Estatistica em Minas, Bello Horizonte.
British Guiana: Government Secretary's Office, Georgetown, Demerara.
Burma: Secretary to the Government of Burma, Education Department, Rangoon.

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[2] Temporarily suspended.
[3] Changed from Library, Hungarian House of Delegates, Budapest.

CANADA:
  ALBERTA: Provincial Library, Edmonton.
  BRITISH COLUMBIA: Provincial Library, Victoria.
  NEW BRUNSWICK: Legislative Library, Fredericton.
  NOVA SCOTIA: Provincial Secretary of Nova Scotia, Halifax.
  SASKATCHEWAN: Legislative Library, Regina.
CEYLON: Chief Secretary's Office, Record Department of the Library, Colombo.
DOMINICAN REPUBLIC: Biblioteca de la Universidad de Santo Domingo, Ciudad Trujillo.
ECUADOR: Biblioteca Nacional, Quito.
GREECE: National Library, Athens.[4]
GUATEMALA: Biblioteca Nacional, Guatemala.
HAITI: Bibliothèque Nationale, Port-au-Prince.
HONDURAS:
  Biblioteca y Archivo Nacionales, Tegucigalpa.
  Ministerio de Relaciones Exteriores, Tegucigalpa.
ICELAND: National Library, Reykjavik.
INDIA:
  BIHAR AND ORISSA: Revenue Department, Patna.
  BOMBAY: Undersecretary to the Government of Bombay, General Department, Bombay.
  UNITED PROVINCES OF AGRA AND OUDH: University of Allahabad, Allahabad.
  WEST BENGAL: Library, Bengal Legislature, Assembly House, Calcutta.
IRAN: Imperial Ministry of Education, Tehran.
IRAQ: Public Library, Baghdad.
JAMAICA: Colonial Secretary, Kingston.
LIBERIA: Department of State, Monrovia.
MALTA: Minister for the Treasury, Valleta.
NEWFOUNDLAND: Department of Home Affairs, St. John's.
NICARAGUA: Ministerio de Relaciones Exteriores, Managua.
PANAMA: Ministerio de Relaciones Exteriores, Panama.
PAKISTAN: Chief Secretary to the Government of Punjab, Lahore.
PARAGUAY: Ministerio de Relaciones Exteriores, Sección Biblioteca, Asunción.
SALVADOR:
  Biblioteca Nacional, San Salvador.
  Ministerio de Relaciones Exteriores, San Salvador.
SIAM: National Library, Bangkok.[5]
VATICAN CITY: Biblioteca Apostolica Vaticana, Vatican City, Italy.

INTERPARLIAMENTARY EXCHANGE OF THE OFFICIAL JOURNAL

There are now being sent abroad 73 copies of the Federal Register and 66 copies of the Congressional Record. The countries to which these journals are being forwarded are given in the following list:

DEPOSITORIES OF CONGRESSIONAL RECORD AND FEDERAL REGISTER

ARGENTINA:
  Biblioteca del Congreso Nacional, Buenos Aires.
  Biblioteca del Poder Judicial, Mendoza[6]
  Cámara de Diputados, Oficina de Informacion Parliamentaria, Buenos Aires.
  Boletín Oficial de la República Argentina, Ministerio de Justica e Instrucción Pública, Buenos Aires.

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[4] Added during the year.
[5] Changed from Department of Foreign Affairs.
[6] Federal Register only.

AUSTRALIA:
- Commonwealth Parliament and National Library, Canberra.
- NEW SOUTH WALES: Library of Parliament of New South Wales, Sydney.
- QUEENSLAND: Chief Secretary's Office, Brisbane.
- WESTERN AUSTRALIA: Library of Parliament of Western Australia.

BRAZIL:
- Biblioteca do Congresso Nacional, Rio de Janeiro.
- Imprensa Nacional, Rio de Janeiro.[6]
- AMAZONAS: Archivo, Biblioteca e Imprensa Publica, Manáos.
- BAHIA: Governador do Estado da Bahia, São Salvador.
- ESPIRITO SANTO: Presidencia do Estado do Espirito Santo, Victoria.
- RIO GRANDE DO SUL: Imprensa Oficial do Estado, Porto Alegre.
- SERGIPE: Biblioteca Publica do Estado de Sergipe, Aracajú.
- SÃO PAULO: Imprensa Oficial do Estado, São Paulo.

BRITISH HONDURAS: Colonial Secretary, Belize.

CANADA:
- Library of Parliament, Ottawa.
- Clerk of the Senate, Houses of Parliament, Ottawa.

CUBA:
- Biblioteca del Capitolio, Habana.
- Biblioteca Publica Panamericana, Habana.[6]

EL SALVADOR: Library, National Assembly, San Salvador.[7]

EGYPT: Ministry of Foreign Affairs, Egyptian Government, Cairo.[8]

FRANCE:
- Bibliothèque, Chambre des Députés, Paris.
- Bibliothèque, Consèil de la Republique.
- Publiques de l'Institute de Droit Compare, Université de Paris, Paris.[6]

GREAT BRITAIN: Printed Library of the Foreign Office, London.

GREECE: Library, Greek Parliament, Athens.

GUATEMALA: Biblioteca de la Asamblea Legislativa, Guatemala.

HAITI: Bibliothèque Nationale, Port-au-Prince.

HONDURAS: Biblioteca del Congreso Nacional, Tegucigalpa.

INDIA:
- Civil Secretariat Library, Lucknow, United Provinces.[6]
- Legislative Assembly Library, Lucknow, United Provinces.
- Legislative Department, Simla.

IRELAND: Dail Eireann, Dublin.

ITALY: International Institute for the Unification of Private Law, Rome.[6]

MEXICO:
- Dirección General de Información, Secretaría de Gobernación, Mexico, D. F.
- Biblioteca Benjamin Franklin, Mexico, D. F.
- AGUASCALIENTES: Gobernador del Estado de Aguascalientes, Aguascalientes.
- CAMPECHE: Gobernador del Estado de Campeche, Campeche.
- CHIAPAS: Gobernador del Estado de Chiapas, Tuxtla Gutierrez.
- CHIHUAHUA: Gobernador del Estado de Chihuahua, Chihuahua.
- COAHUILA: Periódico Oficial del Estado de Coahuila, Palacio de Gobierno, Saltillo.
- COLIMA: Gobernador del Estado de Colima, Colima.
- DURANGO: Gobernador Constitucional del Estado de Durango, Durango.
- GUANAJUATO: Secretaría General de Gobierno del Estado, Guanajuato.

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[6] Federal Register only.

[7] Added during the year.

[8] Congressional Record only.

Mexico—Continued

- Guerrero: Gobernador del Estado de Guerrero, Chilpancingo.
- Jalisco: Biblioteca del Estado, Guadalajara.
- Lower California: Gobernador del Distrito Norte, Mexicali.
- México: Gaceta del Gobierno, Toluca.
- Michoacán: Secretaría General de Gobierno del Estado de Michoacán, Morelia.
- Morelos: Palacio de Gobierno, Cuernavaca.
- Nayarit: Gobernador de Nayarit, Tepic.
- Nuevo León: Biblioteca del Estado, Monterrey.
- Oaxaca: Períodico Oficial, Palacia de Gobierno, Oaxaca.
- Puebla: Secretaría General de Gobierno, Puebla.
- Querétaro: Secretaría General de Gobierno, Sección de Archivo, Querétaro.
- San Luis Potosí: Congreso del Estado, San Luis Potosí.
- Sinaloa: Gobernador del Estado, de Sinaloa, Culiacán.
- Sonora: Gobernador del Estado de Sonora, Hermosillo.
- Tabasco: Secretaría General de Gobierno, Sección 3a, Ramo de Prensa, Villahermosa.
- Tamaulipas: Secretaría General de Gobierno, Victoria.
- Tlaxcala: Secretaría de Gobierno del Estado, Tlacala.
- Veracruz: Gobernador del Estado de Veracruz, Departmento de Gobernación y Justicia, Jalapa.
- Yucatán: Gobernador del Estado de Yucatán, Mérida.

New Zealand: General Assembly Library, Wellington.

Peru: Cámara de Diputados, Lima.

Poland: Ministry of Justice, Warsaw.[9]

Spain: Diputacion de Navarra, San Sebastian.

Switzerland: Bibliothèque, Bureau International du Travail, Geneva.[9]

Union of South Africa:

- Cape of Good Hope: Library of Parliament, Cape Town.
- Transvaal: State Library, Pretoria.

Uruguay: Diario Oficial, Calle Florida 1178, Montevideo.

Venezuela: Biblioteca del Congreso, Caracas.

FOREIGN EXCHANGE AGENCIES

Exchanges are sent to all countries except Rumania. The countries listed are those to which shipments are forwarded by freight. To other countries not appearing on the list, packages are forwarded by mail.

LIST OF AGENCIES

Austria: Austrian National Library, Vienna.

Belgium: Service des Échanges Internationaux, Bibliothèque Royale de Belgique, Bruxelles.

China: Bureau of International Exchange, National Central Library, Nanking.

Czechoslovakia: Bureau des Échanges Internationaux, Bibliothèque de l'Assemblée Nationale, Prague 1–100.

Denmark: Institut des Échanges Internationaux, Bibliothèque Royale, Copenhagen K.

Egypt: Government Press, Publications Office, Bulaq, Cairo.

Finland: Delegation of the Scientific Societies of Finland, Kasärngatan 24, Helsinki.

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[9] Federal Register only.

France: Service des Échanges Internationaux, Bibliothèque Nationale, 58 Rue de Richelieu, Paris.

Germany: Offentliche Wissenschaftliche Bibliothek, Berlin.[10, 11]

German Central Committee for Distribution of Cultural Materials, Stuttgart.[10, 12]

Great Britain and Ireland: Wheldon & Wesley, 83/84 Berwick Street, London, W.1.

Hungary: Hungarian Libraries Board, Ferenciektere 5, Budapest, IV.

India: Superintendent of Government Printing and Stationery, Bombay.

Italy: Ufficio degli Sambi Internazionali, Ministero della Publica Istruxione, Rome.

Japan: International Exchange Service, National Library of Japan, Uyeno Park, Tokyo.[10]

Netherlands: International Exchange Bureau of the Netherlands, Royal Library, The Hague.

New South Wales: Public Library of New South Wales, Sydney.

New Zealand: General Assembly Library, Wellington.

Norway: Service Norvégien des Échanges Internationaux, Bibliothèque de l'Université Royale, Oslo.

Palestine: Jewish National and University Library, Jerusalem.[13]

Poland: Service Polonais des Échanges Internationaux, Bibliothèque Nationale, Warsaw.

Portugal: Secção de Trocas Internacionais, Biblioteca Nacional, Lisbon.

Queensland: Bureau of Exchanges of International Publications, Chief Secretary's Office, Brisbane.

Rumania: Ministère de la Propagande Nationale, Service des Échanges Internationaux, Bucharest.[13]

South Australia: South Australian Government Exchanges Bureau, Government Printing and Stationery Office, Adelaide.

Spain: Junta de Intercambio y Adquisición de Libros y Revistas para Bibliotecas Públicas, Ministerio de Educación Nacional, Avenida Calvo Sotelo 20, Madrid.

Sweden: Kungliga Biblioteket, Stockholm.

Switzerland: Service Suisse des Échanges Internationaux, Bibliothèque Centrale Fédérale, Palais Fédérale, Berne.

Tasmania: Secretary to the Premier, Hobart.

Turkey: Ministry of Education, Department of Printing and Engraving, Istanbul.

Union of South Africa: Government Printing and Stationery Office, Cape Town, Cape of Good Hope.

Union of Soviet Socialist Republics: International Book Exchange Department, Society for Cultural Relations with Foreign Countries, Moscow, 56.

Victoria: Public Library of Victoria, Melbourne.

Western Australia: Public Library of Western Australia, Perth.

Yugoslavia: Section des Échanges Internationaux, Ministère des Affaires Étrangères, Belgrade.

Respectfully submitted.

D. G. Williams, *Acting Chief.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

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[10] Distribution under supervision of War Department.

[11] For all sectors of Berlin and Russian Zone.

[12] For American, British, and French Zones.

[13] Shipments suspended.

APPENDIX 7

REPORT ON THE NATIONAL ZOOLOGICAL PARK

SIR: I have the honor to submit the following report on the operations of the National Zoological Park for the fiscal year ended June 30, 1948.

An appropriation of $455,400 for the operations of the Zoo was provided in the District of Columbia appropriation act. Subject to minor changes in final bills, a total of $441,200 was expended for all purposes, and an unexpended balance of $14,200 remains. This saving was almost entirely from salaries because of the impossibility of filling positions promptly.

The year was a very satisfactory one. Animals of exceptional interest were received; fair progress was made in recruiting the organization, although it still is not fully manned; and some repair work was accomplished.

Minor improvements included the construction of 1,200 linear feet of concrete copings and 12,000 square feet of bituminous concrete sidewalks around some of the animal exhibits and adjacent to roadways; surfacing 4,800 square yards of parking area near the Harvard Street entrance and a short length of service road with penetrating oil and slag covering; constructing and placing 48 park benches made with concrete legs and wood slats.

Chemical fighting of poison ivy was continued with good success. Supplies of building maintenance material which had become badly depleted were somewhat replenished, and some construction, repair, and maintenance equipment was obtained. As a whole the physical condition of the establishment has been improved by concentrating on the places that were most in need of attention.

The National Zoological Park renders a variety of services to the American public. Besides the public exhibits of nearly 2,800 animals and the providing of an attractive recreation area, opportunities are offered for students of biology, particularly vertebrate zoology, as well as for artists, photographers, writers, and research workers—provided the method of research does not endanger the welfare of the animals or of the public. Other direct services are answering in person, by phone, mail, and telegraph, questions regarding animals, their care and transportation; the furnishing of information to other zoos and private and public agencies regarding structures for keeping and housing animals; cooperation with other agencies of the Federal, State, and Municipal governments in research work.

NEEDS OF THE ZOO

The two chief needs of the Zoo are: 1, sufficient funds for a minor increase in personnel and to provide for proper care of the animals and the maintenance of the establishment in a presentable condition; 2, new buildings to replace antiquated structures that have long since ceased to be suitable for the purpose, presentable, or even safe for use. The more urgently needed buildings are: (1) a new administration building to replace the 143-year-old historic landmark now in use for an office building for the Zoo, but which is neither suitably located nor well-adapted for the purpose. This building is in an excellent location for a public recreational structure and could probably be rehabilitated and used for recreational purposes, perhaps as a children's museum, and thus maintained as a historic building. The new office building should be better located both from the standpoint of accessibility to the public and convenience for the administration of the Zoo; (2) a new building to house antelopes and other medium-size hoofed animals that require a heated building.

VISITORS

It had been anticipated that after the war the fluctuation in attendance during the week would again be pronounced. It has therefore been surprising to note that attendance on early days of the week has been relatively high, and the peak attendance of the week ends has been less pronounced than before the war. This is probably due to continued high employment in the Washington area and to increase in travel accompanying the general economic prosperity.

The total attendance was 3,040,540, an increase of 309,862 over the previous year and the second largest year's attendance the Zoo has ever had.

ESTIMATED NUMBER OF VISITORS FOR FISCAL YEAR 1948

July (1947)	434, 500	February	98, 250
August	359, 200	March	300, 590
September	297, 800	April	341, 800
October	232, 100	May	325, 700
November	110, 500	June	385, 600
December	110, 500		
January (1948)	44, 000	Total	3, 040, 540

Groups came to the Zoo from schools in 27 States, some as far away as Maine, Florida, Texas, and Wisconsin.

NUMBER OF GROUPS FROM SCHOOLS

	Number of groups	Number in groups
Alabama	3	111
Connecticut	4	241
Delaware	8	285
District of Columbia	112	5, 539
Florida	2	297
Georgia	30	1, 709
Illinois	1	31
Indiana	7	232
Kentucky	4	326
Maine	7	546
Maryland	505	30, 208
Massachusetts	9	579
Michigan	5	434
Missouri	2	66
New Hampshire	1	120
New Jersey	23	1, 807
New York	51	3, 682
North Carolina	91	3, 230
Ohio	44	1, 737
Oklahoma	1	27
Pennsylvania	192	9, 290
Rhode Island	1	63
South Carolina	10	339
Tennessee	22	867
Texas	1	16
Virginia	290	16, 145
West Virginia	27	1, 241
Wisconsin	1	81
Total	1, 454	79, 249

About 2 p. m. each day the cars then parked in the Zoo are counted by the Zoo police and listed according to the State, Territory, or country from which they came. This is, of course, not a census of the cars coming to the Zoo but is valuable in showing the percentage of attendance by States of people in private automobiles. The tabulation for the fiscal year 1948 is as follows:

	Percent
Washington, D. C	27. 4
Maryland	26. 2
Virginia	20. 1
Pennsylvania	4. 5
New York	2. 3
North Carolina	1. 9
Ohio	1. 6
West Virginia	1. 04
New Jersey	1. 01
Illinois	1. 01
Massachusetts	. 9
Florida	. 8

The cars that made up the remaining 11.24 percent came from every one of the remaining States, as well as from Alaska, Alberta, British Columbia, Canal Zone, Cuba, Great Britain, Hawaii, Manitoba, Mexico, Newfoundland, Nova Scotia, Ontario, Panama, Philippine Islands, Puerto Rico, Quebec, Saskatchewan.

It is well known that District of Columbia, Maryland, and Virginia cars bring to the Zoo many people from other parts of the United States and of the world, but no figures are available on which to base percentages.

THE EXHIBITS

Animals for the collection are acquired by gift, deposit, purchase, exchange, births and hatchings, and are removed by return of specimens on deposit, exchange, or death. Although depositors are at liberty to remove the specimens that they place in the Zoo, many leave the specimens for the rest of their lives.

The animal collection has been definitely improved during the year. The total number of specimens on hand June 30, 1948, was 2,797, or 210 less than a year ago, but the collection as a whole is more valuable because of the addition of a number of rare animals.

STATUS OF COLLECTION

Class	Species	Individuals	Class	Species	Individuals
Mammals	196	709	Insects	1	100
Birds	339	1,064	Arachnids	2	3
Reptiles	100	506	Mollusks	2	12
Amphibians	25	179			
Fish	25	224	Total	690	2,797

SUMMARY

Animals on hand July 1, 1947	3,007
Accessions during the year	1,041
Total number of animals in collection during the year	4,048
Removals for various reasons such as death, exchanges, return of animals on deposit, etc	1,251
In collection on June 30, 1948	2,797

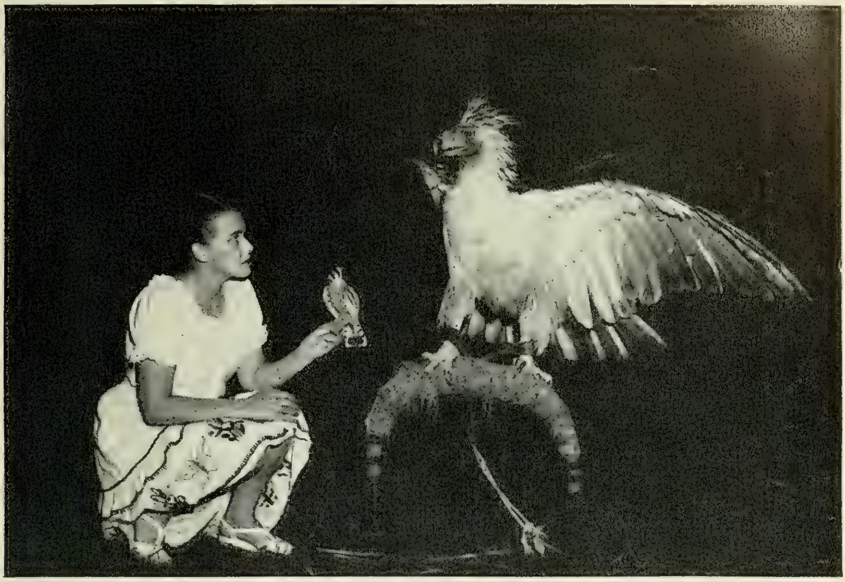
ACQUISITION OF SPECIMENS

Air transportation of specimens of moderate weight but of unusual interest has brought to the Zoo some of the outstanding exhibits of the year, including the collection of tarsiers, cloud rats, tree shrews, monkey-eating eagle, and other specimens brought from the Philippines by Charles Wharton. The National Geographic Society sent by air from Santa Cruz, Bolivia, to Washington a pichi ciego mayor (*Burmeisteria retusa*), a small, very peculiar type of armadillo, which is a great rarity in collections. It was alive when it arrived in Miami, Fla., but unfortunately died before it reached Washington. However, the National Museum gained a valuable specimen and some of the Washington biologists had their first glimpse of the remarkable little creature. This may be the first one to have arrived alive in the United States.

The outstanding animals received during the year were:

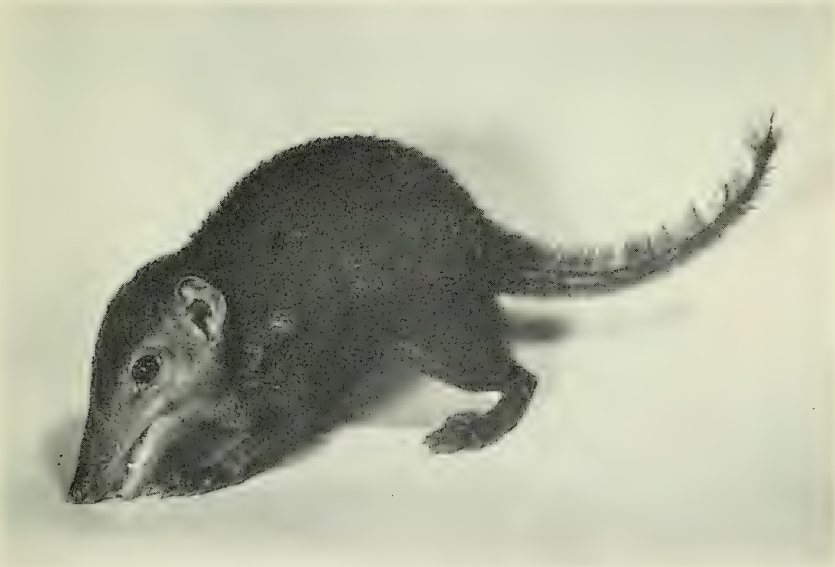
4 King penguins.
28 Mindanao tarsiers.
9 Philippine tree shrews.
7 Bushy-tailed cloud rats.
1 Monkey-eating eagle.
3 Coconut crabs.
1 Sitatunga.
6 Giant racquet-tailed drongos.
8 Emperor penguins.
4 Adelie penguins.
1 Arctic fox.
2 Snow buntings.
104 Elephant shrews. These were brought to the United States from East Africa by the Medical Division of the United States Navy for studies of tropical diseases, and were quartered at the Zoo until the Navy could provide quarters for them.

As in any colony of living things, there is a steady turn-over, so that the exhibits are constantly changing. Thus, the inventory list of specimens in the collection on June 30 of each year does not show all the kinds of animals that were exhibited during the year; sometimes creatures of outstanding interest at the time they were shown are no longer in the collection at the time the list is prepared.



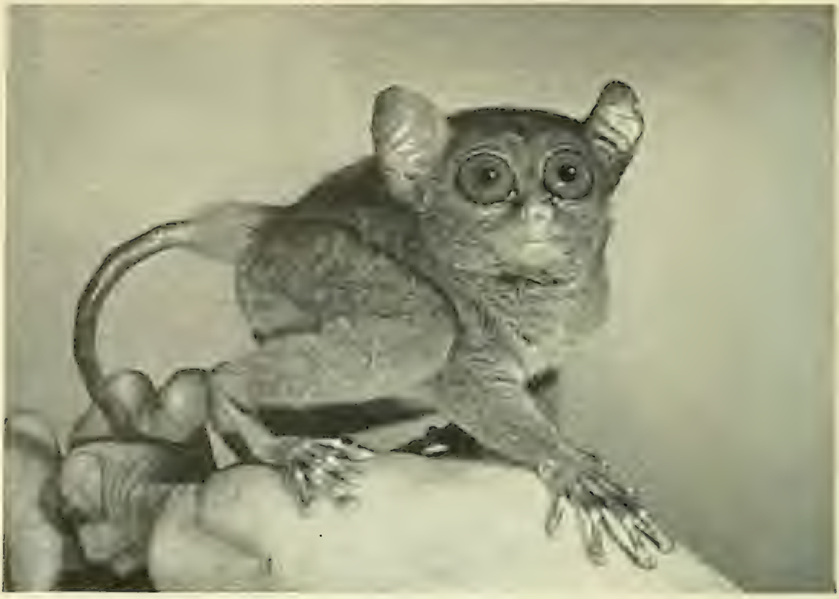
1. PHILIPPINE MONKEY-EATING EAGLE (PITHECOPHAGA JEFFERYI) AND AN AMERICAN SPARROW HAWK ON THE HAND OF MRS. JOHN N. HAMLET.

Photograph by John N. Hamlet.

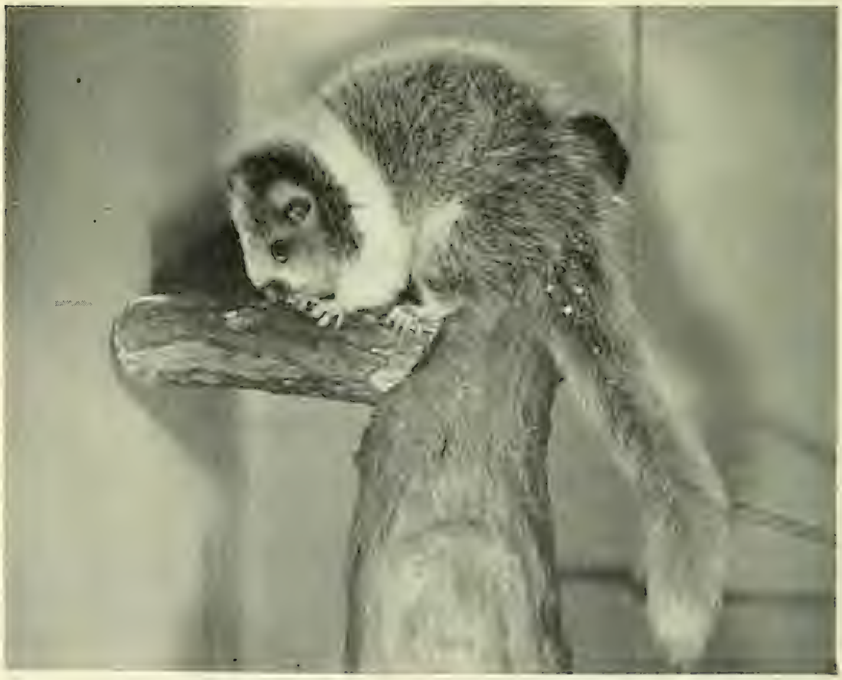


2. PHILIPPINE TREE SHREW (UROGALE EVERETTI).

Photograph by Ernest P. Walker.



1. MINDANAO TARSIER (TARSIUS CARBONARIUS).
Photograph by Ernest P. Walker.



2. BUSHY-TAILED CLOUD RAT (CRATEROMYS SCHADENBERGI).
Photograph by Ernest P. Walker.

DEPOSITORS AND DONORS AND THEIR GIFTS

(Deposits are marked *)

Abbott, Capt. J. M., Fort Belvoir, Va., through Dr. John Aldrich, of Fish and Wildlife Service, bald eagle.

Abramson, Dr. Alfred, Arlington, Va., 3 Pekin ducks.

Aburrow, Margaret, Washington, D. C., Pekin duck.

Allen, Arthur, Washington, D. C., Pekin duck, red-shouldered hawk.

Allen, George and John Jr., Tehran, Iran, 2 Syrian brown bears.

Allen, Mrs. Stanley, Washington, D. C., French salamander.

Animal Rescue League, Washington, D. C., white-tufted marmoset.

Arnold, J. O., Silver Spring, Md., Pekin duck.

Baker, Adelbert R., Washington, D. C., box turtle.

Bartsch, Dr. Paul, U. S. National Museum, Washington, D. C., mourning dove.

Bayer, F. N., Smithsonian Institution, Washington, D. C., 3 coconut crabs.

Beauchart, Harry J., Washington, D. C., 11 golden hamsters.

Bell, Donald, Washington, D. C., eastern robin.

Berrey, H. K., Jr., Washington, D. C., 3 horned lizards.

Blalock, A. D., Orinda, Calif., 2 yellow-billed magpies, 2 Boyle's king snakes, 8 California house finches, yellow-billed magpie.*

Boswell, William, Washington, D. C., red-tailed hawk.

Boys of Camp Letts, Y. M. C. A., Edgewater, Md., 2 black vultures.

Brady, Morris K., Washington, D. C., 2 cuzumbies.

Bricker, Mrs., Kensington, Md., 5 opossums.

Brill, Wallace, Jr., Washington, D. C., Cooper's hawk.

Brown, J. A., Chevy Chase, Md., 2 Pekin ducks.

Brozyna, C. A., Takoma Park, Md., 2 grass paroquets.

Bullock, Carl, Bethesda, Md., domestic rabbit.

Burgess, H. E., Washington, D. C., 4 golden hamsters.

Butcher, David H., Falls Church, Va., 2 Pekin ducks.

Calhoun, Frank, Clinton, Md., domestic sheep.*

Carter, C., Winchester, Va., rhesus monkey.*

Chicago Zoological Park, Brookfield, Ill., 2 sitatungas.

Christopher, L. C., Arlington, Va., 2 Pekin ducks.

Clark, W. R., Arlington, Va., barred owl.

Clarry, Warren A., Arlington, Va., 2 barred owls.

Clemm, Frank, Arlington, Va., loggerhead turtle.

Cleveland Zoological Park, through Fletcher Reynolds, Cleveland, Ohio, 2 massasaugas.

Conger, Richard, Washington, D. C., 2 box turtles.

Couch, V. L., Arlington, Va., 2 Pekin ducks.

Craig, Costello M., Washington, D. C., grass paroquet.

Crawford, R., Warren, Ohio, 8 massasaugas.

Curtis, Representative Carl T. of Nebraska, domestic rabbit.*

Cynthia Warner School, Takoma Park, Md., domestic rabbit, 4 Pekin ducks.

Dahl, George, Washington, D. C., eastern robin.

Dargan, Lucas, Washington, D. C., jumping mouse.

Davis, Malcolm, National Zoological Park, Washington, D. C., domestic pigeon.

Davis, Mary, Arlington, Va., mockingbird, 2 blue jays.

De Bruhl, Ben, Washington, D. C., 2 Pekin ducks.

Decker, Robert L., Deale, Md., 14 mallard ducks.

De Santis, Sherwin and Lawrence, Washington, D. C., Pekin duck.

Detwiler, D. T., Richmond, Va., rhesus monkey.

De Zerne, George, Arlington, Va., 2 skunks.
Dillon, Ray A., Washington, D. C., star-nosed mole.
Dog Pound, Washington, D. C., gray fox, raccoon.
Dow, Brenda L., Chevy Chase, Md., 2 Pekin ducks.
Edwards, Nancy, Takoma Park, Md., 3 Cumberland terrapins.
Fergeron, E., Schriever, La., false chameleon.
Ferry, Maxine T., Washington, D. C., 8 domestic rabbits.
Finch, Dick, Arlington, Va., hoary bat.
Foehl, Arthur, Williamstown, N. J., 4 giant land snails.
Fudge, Bill M., Bethesda, Md., osprey or fish hawk.
Geesa, Mrs., Washington, D. C., 2 Pekin ducks.
George Green's Animal and Bird Farm, Bulls Gap, Tenn., box turtle.
Gilbert, Jimmy, Washington, D. C., Pekin duck.
Gilbert, Paul E., Washington, D. C., double yellow-headed parrot.*
Ginsberg, Harry and Jerry, Washington, D. C., pilot snake, water snake.
Glazier, Stephen, Washington, D. C., domestic rabbit.
Golden, Miss Helen, Grand Forks, S. Dak., 14 Indian rock pythons.
Green Acres School, Bethesda, Md., pied grebe.
Hall, Miss Janet, Washington, D. C., Mexican falcon.*
Hanna, Bob, Bethesda, Md., grass paroquet.
Harrison, Mrs. L. H., Washington, D. C., purple grackle.
Harvey, Dr. Verne K., Alexandria, Va., eastern robin.
Heinz, John E., Washington, D. C., Pekin duck.
Hershup, Boyd, Washington, D. C., Pekin duck.
Higgins, J. W., Arlington, Va., snapping turtle.
Hines, W. M., Sr., Arlington, Va., tortoise.
Hoek, Raymond, Fairbanks, Alaska, Arctic fox, 2 snow buntings.
Holmes, Mrs. N. H., Washington, D. C., ring-necked snake.
Horton, Mrs., Washington, D. C., Pekin duck.
Hughes, Charles, Silver Spring, Md., alligator, painted turtle.
Hunter, Jan F., Washington, D. C., 8 Mexican free-tailed bats.
Huppman, Louis R., Baltimore, Md., woolly monkey.*
Ingham, Rex, Ruffin, N. C., raccoon, 2 plains prairie dogs.*
Ingles, O. C., Washington, D. C., muscovy duck.
Jennier, Roy H., National Zoological Park, Washington, D. C., 8 marine toads.
Johnson, John H., Silver Spring, Md., horned grebe.
Johnson, Mrs. W., Chevy Chase, Md., American goldfinch.
Jones, Mrs. Clara, Washington, D. C., black muskrat.
Kaufman, Judy, Greenbelt, Md., blue jay.
Kensey, A. L., Washington, D. C., 2 Pekin ducks.
Kent, Donald, Washington, D. C., opossum.
Kent, Robert R., Washington, D. C., sparrow hawk.
Kley, John A., Washington, D. C., 3 horned lizards.
Knop, Peter, Wood Acres, Md., musk turtle.
Kornfield, Isadore, Washington, D. C., 2 Pekin ducks.
Kroh, Miss Kay, Baltimore, Md., green guenon.
Kuntz, Robert E., Washington, D. C., 3 collared lizards, 6 Zanzibar-Madagascar snails.
Lady, John E., Takoma Park, Md., 3 moscovy ducks.
La Fever, Larry, Arlington, Va., water snake.
Lagarde, B., Frederick, Md., 4 pilot snakes.
Lawler, Mrs. Norton, Washington, D. C., 2 Pekin ducks.
Legel, E. F., Arlington, Va., 7 canaries.
Le Roy, Mrs. H. B., Arlington, Va., Pekin duck.

Lipscomb, George W., Washington, D. C., Pekin duck.
Lohman, K., Alexandria, Va., purple finch.
Long, Mrs. D. E., Washington, D. C., Pekin duck.
Luethje, Harry M., Washington, D. C., sparrow hawk.
Lund, R. J., Washington, D. C., Pekin duck.
Lyons, Miss Nancy, Washington, D. C., 2 Pekin ducks.
Maker, Colin, Washington, D. C., 3 horned lizards.
Mann, O. R., Gaithersburg, Md., 2 domestic geese.
Marknett, K. A., Aldie, Va., red-tailed hawk.
Matthews, Calvin, Washington, D. C., rhesus monkey.*
May, David, Takoma Park, Md., eastern cottontail rabbit.
McCann, Bernice, Washington, D. C., grass paroquet.
Meacham, Miss Ann, Washington, D. C., 2 Pekin ducks.
Meems Bros. & Ward, New York, N. Y., black rhinoceros.*
Megill, W. F., Washington, D. C., mallard duck.
Meyer, F. A., Washington, D. C., tarantula.
Mickey, M. G., Washington, D. C., barn owl.
Miller, Lt. William, Fort Clayton, Canal Zone, white-breasted toucan.
Mills, John, National Zoological Park, 6 pine or fence lizards.
Montminy, Clarence, Washington, D. C., worm snake, 2 pine or fence lizards.
Monzer, Nolan, Garrett Park, Md., 5 opossums.
Morgan, David, Bethesda, Md., barn owl, sparrow hawk,* Cooper's hawk.*
Morris, James, Washington, D. C., American crow.
Murphy, Glen F., Washington, D. C., Pekin duck.
Musser, G., Falls Church, Va., copperhead snake.
Musser, George, Washington, D. C., eastern diamond-backed rattlesnake, hog-nosed snake.
Myers, Miss E. V., Washington, D. C., vervet guenon.*
National Geographic Society, Washington, D. C., pichi ciego mayor.
National Zoological Park Police, Washington, D. C., muskrat.
Natural History Society of Maryland, Baltimore, Md., water moccasin, 2 copperhead snakes.
Nelson, Judy, Alexandria, Va., domestic rabbit.
Nesser, Julius, Chevy Chase, Md., alligator.
Newell, C., Arlington, Va., blue jay.
Newill, Dr. D. S., McConnellsville, Pa., ocellated turkey.
Nigh, Frank, Washington, D. C., gray squirrel.
Oney, Mrs. H., Washington, D. C., tarantula.
Packer, Mrs. D. M., Alexandria, Va., horned lizard.
Paul, Rev. J. Edward, Wilmington, Del., Virginia deer.
Payne, Dorothy, Washington, D. C., screech owl.
Payne, Harold O., Washington, D. C., opossum.
Power, Stacy, Washington, D. C., Philippine macaque.*
Randel, Lt. H., U. S. Army Medical Corps., jaguar, fer-de-lance, water snake, 6 howling monkeys, 3 Panama curassows, 5 Central American boas, 2 sumbadoras or mussurana, 5 tropical rattlesnakes, 16 terrapins.
Reuter, Mrs. L., Washington, D. C., raccoon.
Rhodes, Mrs. I. L., Washington, D. C., gray squirrel.
Rhodes, John, College Heights, Md., Pekin duck.
Roberts, John C., Alexandria, Va., 2 horned lizards.
Roberts, L. W., Washington, D. C., Siamese black-hooded cobra.
Rogers, Raymond, McLean, Va., pilot snake.
Roland, T. J., Washington, D. C., domestic rabbit.
Rucker, Colburn, Arnold, Md., pilot snake.

Schafer, Frederick, Washington, D. C., turkey vulture.

Scherfee, S. H., Los Angeles, Calif., California king snake, California racer snake, Pacific rattlesnake.

Schrieber, W. H., Washington, D. C., mallard duck.

Seay, Charles F., Washington, D. C., Pekin duck.

Shaw, H. L., Baltimore, Md., hamadryad baboon.

Shipley, Mrs. William H., Washington, D. C., Pekin duck.

Sigwald, Mr., Bethesda, Md., hawk.

Simpson, Miss Jacqueline, Washington, D. C., 2 sea horses.

Sloan, Leonard, Washington, D. C., Pekin duck.

Smith, Mrs. Don C., Washington, D. C., 6 golden hamsters.*

Souder, L. B., Arlington, Va., 4 mockingbirds.

Spahn, Carl, Washington, D. C., Pekin duck.

Speaker, Miss Terry, Falls Church, Va., alligator.

Spiegler, Mrs. Paul, Washington, D. C., 2 zebra finches.

Stephenson, Rear Admiral C. S., Washington, D. C., Pekin duck × mallard duck hybrid.*

Stevenson, William R., National Zoological Park, Washington, D. C., mole.

Stoessel, Mrs. Victor, Falls Church, Va., skunk,* Philippine macaque.*

Stohlman, Jack, Chevy Chase, Md., weasel.

Talbert, Mrs. Marian, Washington, D. C., 2 Pekin ducks.

Taylor, Walter, Washington, D. C., Pekin duck.

Thomas, J. L., Jr., Washington, D. C., 2 horned lizards.

U. S. Naval Hospital, Bethesda, Md., rhesus monkey.*

U. S. Naval Medical Research, Bethesda, Md., 104 East African elephant shrews.*

U. S. Naval Second Antarctic Expedition 1947–48, collected by Malcolm Davis of National Zoological Park, Washington, D. C., 8 emperor penguins, 4 adelie penguins, carrier pigeon, douroucouli or owl monkey, brown booby or ganet, honey creeper, pileated tinamou, blue tanager, plain-colored tanager.

Van Horn, Mrs. Lena M., Washington, D. C., double yellow-headed parrot.

Vipond, L. C., Silver Spring, Md., Pekin duck.

Walker, Ernest E., Washington, D. C., 5 golden hamsters.

Wallace, E. E., Landover Hills, Md., sparrow hawk.

Weber, Mrs., Washington, D. C., domestic rabbit.

Welch, Carl, Washington, D. C., skunk.

Wharton, Charles, Avondale Estates, Ga., palm civet,* slender-tailed cloud rat,* monkey-eating eagle,* Philippine serpent eagle,* 26 Mindanao tarsiers,* 7 Philippine tree shrews,* 5 bushy-tailed cloud rats,* 5 reticulated pythons,* 2 monitor lizards,* siren, amphiuma.

Whitmore, Mrs. M. C., Silver Spring, Md., map turtle.

Willard, Miss Carol, Norman, Okla., alligator.

Williams, Clifton R., Washington, D. C., 2 coatimundi.*

Williamson, Mr., Washington, D. C., 8 pilot snakes, 3 water snakes, 4 smooth green snakes.

Wilson, Mr. and Mrs. Ross, Liberia, West Africa, African leopard.

Wilson, Sam, Washington, D. C., eastern robin.

Wilson, Vanez T., Supt., Bear River Migratory Bird Refuge, Brigham, Utah, 6 green-winged teals, 4 baldpates.

Winder, William T., Jr., Alexandria, Va., pilot snake.

Withers, John, Clinton, Md., garter snake.

Woden, Mrs. H. L., Washington, D. C., domestic rabbit.

Wood, Harold, Winchester, Va., domestic pigeon.

Wordford, Mrs., Washington, D. C., alligator.

BIRTHS AND HATCHINGS

MAMMALS

Scientific name	*Common name*	*Number*
Ammotragus lervia	Aoudad	4
Ateles geoffroyi vellerosus	Spider monkey	1
Axix axis	Axis deer	1
Bison bison	American bison	1
Bos taurus	British Park cattle	1
Bos taurus	West Highland or Kyloe cattle	1
Camelus bactrianus	Bactrian camel	1
Cephalophus nigrifrons	Black-fronted duiker	1
Cercopithecus aethiops pygerythrus × *C. aethiops sabaeus*	Vervet guenon × green guenon hybrid	1
Cercopithecus aethiops sabaeus	Green guenon	2
Choeropsis liberiensis	Pigmy hippopotamus	1
Cynomys ludovicianus	Plains prairie dog	10
Dama dama	Brown fallow deer	3
Dama dama	White fallow deer	5
Dasyprocta punctata	Speckled agouti	1
Felis concolor	Puma	1
Hemitragus jemlahicus	Tahr	1
Hippopotamus amphibius	Hippopotamus	1
Hylobates agilis × *H. lar pileatus*	Hybrid gibbon	1
Marmota monax	Woodchuck	4
Odocoileus virginianus	Virginia deer	1
Ovis europaea	Mouflon	1
Thalarctos maritimus	Polar bear	2
Thalarctos maritimus × *Ursus middendorffi*	Hybrid bear	4
Vulpes fulva	Red fox	2

BIRDS

Anas platyrhynchos	Mallard duck	38
Branta canadensis	Canada goose	18
Cairina moschata	Muscovy duck	4
Chenopsis atrata	Black swan	10
Fulica americana	American coot	8
Gallus sp	Fighting fowl	1
Larus novaehollandiae	Silver gull	4
Leucophoyx thula	Snowy egret	1
Nycticorax nycticorax hoactli	Black-crowned night heron	18
Pavo cristatus	Blue peafowl	4
Poephila acuticauda	Long-tailed finch	2
Spheniscus humboldti	Humboldt penguin	1
Taeniopygia castanotis	Zebra finch	3

REPTILES

Crotalus horridus horridus	Timber rattlesnake	6
Elaphe guttata	Corn snake	7
Epicrates cenchris	Rainboa boa	4

ANIMALS IN THE NATIONAL ZOOLOGICAL PARK, JUNE 30, 1948

MAMMALS

MARSUPIALIA

Scientific name	*Common name*	*Number*
Didelphiidae:		
Didelphis virginiana	Opossum	5
Metachirus nudicaudatus	South American naked-tailed opossum	1
Phalangeridae:		
Petaurus breviceps	Lesser flying phalanger	1
Petaurus sciureus	Australian flying phalanger	2
Macropodidae:		
Dendrolagus inustus	New Guinea tree kangaroo	1

INSECTIVORA

Scientific name	*Common name*	*Number*
Talpidae:		
Condylura cristata	Star-nosed mole	1
Soricidae:		
Urogale everetti	Philippine tree shrew	2
Erinaceidae:		
Erinaceus europaeus	European hedgehog	4
Macroselididae:		
Elephantulus rufescens	East African elephant shrew	67

CHIROPTERA

Scientific name	*Common name*	*Number*
Molossidae:		
Tadarida mexicana	Free-tailed bat	2

CARNIVORA

Scientific name	*Common name*	*Number*
Felidae:		
Felis chaus	Jungle cat	1
Felis concolor	Puma	4
Felis concolor patagonica	Patagonian puma	1
Felis concolor × *F. c. patagonica*	Hybrid North American × South American puma	4
Felis leo	Lion	3
Felis onca	Jaguar	4
	Black jaguar	1
Felis pardalis	Ocelot	2
Felis pardus	Indian leopard	1
	Black Indian leopard	2
Felis pardus	African leopard	1
Felis temminckii	Golden cat	1
Felis tigris	Bengal tiger	2
Felis tigris longipilis	Siberian tiger	1
Felis tigris sumatrae	Sumatran tiger	2
Herpailurus yaguarondi	Eyra or yaguarondi	1
Lynx rufus	Eastern bob cat	1
Oncifelis geoffroyi	Geoffroy's cat	3
Oncilla pardinoides	Lesser tiger cat	1

Scientific name	*Common name*	*Number*
Viverridae:		
Arctictis binturong	Binturong	1
Civettictis civetta	African civet	1
Myonax sanguineus	Dwarf civet	1
Nandinia binotata	African palm civet	1
Paradoxurus hermaphroditus	Small-toothed palm civet	2
Hyaenidae:		
Crocuta crocuta germinans	East African spotted hyena	2
Canidae:		
Alopex lagopus	Arctic fox	1
Canis dingo	Dingo	2
Canis latrans	Coyote	1
Canis lupus nubilus	Plains wolf	1
Cuon javanicus sumatrensis	Sumatran wild dog	1
Fennecus zerda	Fennec fox	1
Nyctereutes procyonoides	Raccoon dog	1
Urocyon cinereoargenteus	Gray fox	8
Vulpes fulva	Red fox	11
Procyonidae:		
Bassaricyon sp	Cuzumbie	2
Nasua narica	Coatimundi	10
Nasua nasua	Red coatimundi	1
Nasua nelsoni	Nelson's coatimundi	1
Potos flavus	Kinkajou	6
Procyon lotor	Raccoon	8
	Black raccoon	3
	Raccoon (albino)	1
Bassariscidae:		
Bassariscus astutus	Ring-tail or cacomistle	1
Mustelidae:		
Grisonella huronax	Grison	1
Lutra canadensis vaga	Florida otter	1
Martes (Lamprogale) flavigula henricii	Asiatic marten	1
Meles meles leptorynchus	Chinese badger	1
Mellivora capensis	Ratel	1
Mephitis mephitis nigra	Skunk	7
Mustela eversmanni	Ferret	1
Mustela frenata noveboracensis	Weasel	1
Taxidea taxus	American badger	2
Tayra barbara barbara	White tayra	2
Tayra barbara senilis	Gray-headed tayra	1
Ursidae:		
Euarctos americanus	Black bear	2
Euarctos thibetanus	Himalayan bear	1
Helarctos malayanus	Malay or sun bear	1
Melursus ursinus	Sloth bear	1
Thalarctos maritimus	Polar bear	2
Thalarctos maritimus × *Ursus middendorffi*	Hybrid bear	4
Tremarctos ornatus	Spectacled bear	1
Ursus arctos	European brown bear	1
Ursus arctos occidentalis	Syrian brown bear	2
Ursus gyas	Alaskan Peninsula bear	4
Ursus middendorffi	Kodiak bear	3
Ursus sitkensis	Sitka brown bear	3

PINNIPEDIA

Scientific name	*Common name*	*Number*
Otariidae:		
Zalophus californianus	Sea lion	2
Procidae:		
Phoca vitulina richardii	Pacific harbor seal	2

PRIMATES

Scientific name	*Common name*	*Number*
Lemuridae:		
Lemur macacao	Acoumba lemur	2
Lemur mongoz	Mongoz lemur	2
Tarsius carbonarius	Mindanao tarsiers	3
Callitrichidae:		
Leontocebus rosalia	Silky or lion-headed marmoset	2
Cebidae:		
Aotus trivirgatus	Douroucouli or owl monkey	6
Ateles geoffroyi vellerosus	Spider monkey	2
Cebus apella	Gray capuchin	3
Cebus capucinus	White-throated capuchin	4
Cebus fatuellus	Weeping capuchin	3
Cercopithecidae:		
Cercocebus aterrimus	Black-crested mangabey	1
Cercocebus fuliginosus	Sooty mangabey	2
Cercocebus torquatus lunulatus	White-crowned mangabey	1
Cercopithecus aethiops pygerythrus	Vervet guenon	1
Cercopithecus aethiops sabaeus	Green guenon	11
Cercopithecus aethiops sabaeus × *C. a. pygerythrus*	Hybrid green guenon × vervet guenon	3
Cercopithecus cephus	Moustached guenon	2
Cercopithecus diana	Diana monkey	3
Cercopithecus diana roloway	Roloway monkey	1
Cercopithecus neglectus	De Brazza's guenon	1
Cercopithecus nictitans petaurista	Lesser white-nosed guenon	2
Cercopithecus preussi	Preussi's guenon	1
Erythrocebus patas	Patas monkey	1
Gymnopyga maurus	Moor monkey	1
Macaca irus	Crab-eating macaque	1
Macaca irus mordax	Javan macaque	4
Macaca lasiotis	Chinese macaque	1
Macaca mulatta	Rhesus monkey	13
Macaca nemestrina	Pig-tailed monkey	1
Macaca philippinensis	Philippine macaque	4
Macaca silenus	Wanderoo monkey	2
Macaca sinica	Toque or bonnet monkey	1
Macaca speciosa	Red-faced macaque	1
Papio porcarius	Chacma baboon	1
Hylobatidae:		
Hylobates agilis	Sumatran gibbon	1
Hylobates agilis × *H. lar pileatus*	Hybrid gibbon	1
Hylobates hoolock	Hoolock gibbon	1
Hylobates lar pileatus	Black-capped gibbon	1
Symphalangus syndactylus	Siamang gibbon	1

RODENTIA

Scientific name	*Common name*	*Number*
Sciuridae:		
Citellus beecheyi douglasii	Douglas ground squirrel	2
Cynomys ludovicianus	Plains prairie dog	66
Funisciurus leucostigma	West African bush squirrel	2
Glaucomys volans	Flying squirrel	6
Marmota monax	Woodchuck or ground hog	4
Sciurus stramineus	South American gray squirrel	2
Tamias striatus	Eastern chipmunk	1
Tamiasciurus hudsonicus	Red squirrel	1
Heteromyidae:		
Dipodomys ordii	Ord kangaroo rat	2
Cricetidae:		
Mesocricetus auratus	Golden hamster	30
Microtus pennsylvanicus	Meadow mouse	6
Muridae:		
Crateromys schadenbergi	Bushy-tailed cloud rat	1
Meriones unguiculatus	Mongolian gerbil	1
Mus musculus	White and other domestic mice	10
Ondatra zibethicus	Muskrat	7
Oryzomys palustris	Rice rat	4
Phloeomys cumingi	Slender-tailed cloud rat	3
Rattus norvegicus	Hooded laboratory rat	21
Hystricidae:		
Acanthion brachyurum	Malay porcupine	3
Atherurus africanus	West African brush-tailed porcupine	1
Myocastoridae:		
Myocastor coypus	Coypu	3
Capromyidae:		
Capromys pilorides	Hutia	2
Dasyproctidae:		
Cuniculus paca	Paca	2
Dasyprocta prymnolopha	Agouti	1
Dasyprocta punctata	Speckled agouti	1
Chinchillidae:		
Chinchilla chinchilla	Chinchilla	4
Lagidium viscaccia	Peruvian viscacha	5
Caviidae:		
Cavia porcellus	Guinea pig	2
Dolichotis patagona	Patagonian cavy	1

LAGOMORPHA

Leporidae:		
Oryctolagus cuniculus	Domestic rabbit	1
Sylvilagus floridanus	Cottontail rabbit	1

ARTIODACTYLA

Bovidae:		
Ammotragus lervia	Aoudad	21
Bibos gaurus	Gaur	3
Bison bison	American bison	13
	Albino bison	1

Scientific name	*Common name*	*Number*
Bovidae—Continued		
Bos indicus	Zebu	3
Bos taurus	Domestic cow (Jersey)	1
Bos taurus	West Highland or Kyloe cattle	4
Bos taurus	British Park cattle	6
Bubalus bubalis	Water buffalo	2
Capra sibirica	Ibex	1
Cephalophus maxwellii	Maxwell's duiker	1
Cephalophus niger	Black duiker	1
Cephalophus nigrifrons	Black-fronted duiker	3
Hemitragus jemlahicus	Tahr	6
Limnotragus spekii	Sitatunga	1
Oryx leucoryx	Arabian oryx	1
Ovis aries	Domestic sheep	1
Ovis europaea	Mouflon	3
Poephagus grunniens	Yak	5
Pseudois nayaur	Bharal or blue sheep	1
Syncerus caffer	African buffalo	2
Taurotragus oryx	Eland	4
Cervidae:		
Axis axis	Axis deer	4
Cervus canadensis	American elk	4
Cervus elaphus	Red deer	2
Cervus nippon	Japanese deer	5
Cervus nippon manchuricus	Dybowsky deer	2
Dama dama	Fallow deer White fallow deer	13 16
Odocoileus virginianus	Virginia deer	8
Giraffidae:		
Giraffa camelopardalis	Nubian giraffe	4
Giraffa reticulata	Reticulated giraffe	1
Camelidae:		
Camelus bactrianus	Bactrian camel	3
Camelus dromedarius	Single-humped camel	3
Lama glama	Llama	1
Lama glama guanico	Guanaco	3
Lama pacos	Alpaca	2
Vicugna vicugna	Vicuña	1
Tayassuidae:		
Pecari angulatus	Collared peccary	1
Suidae:		
Babirussa babyrussa	Babirussa	1
Phacochoerus aethiopicus aeliani	East African wart hog	2
Sus scrofa	European wild boar	2
Hippopotamidae:		
Choeropsis liberiensis	Pigmy hippopotamus	6
Hippopotamus amphibius	Hippopotamus	2
PERISSODACTYLA		
Equidae:		
Equus burchellii antiquorum	Chapman's zebra	2
Equus kiang	Asiatic wild ass or kiang	1
Equus onager	Onager	1
Equus przewalskii	Mongolian wild horse	3
Equus zebra	Mountain zebra	1

Scientific name	*Common name*	*Number*
Tapiridae:		
Acrocodia indica	Asiatic tapir	2
Rhinocerotidae:		
Diceros bicornis	Black rhinoceros	1
Rhinoceros unicornis	Great Indian one-horned rhinoceros	1

PROBOSCIDEA

Scientific name	*Common name*	*Number*
Elephantidae:		
Loxodonta africana oxyotis	African elephant	1

EDENTATA

Scientific name	*Common name*	*Number*
Dasypodidae:		
Chaetophractus villosus	Hairy armadillo	1
Euphractus sexcinctus	Six-banded armadillo	1
Myrmecophagidae:		
Myrmecophaga tridactyla	Giant anteater	1

BIRDS

STRUTHIONIFORMES

Scientific name	*Common name*	*Number*
Struthionidae:		
Struthio camelus	Ostrich	1

RHEIFORMES

Scientific name	*Common name*	*Number*
Rheidae:		
Rhea americana	Common rhea	3

CASUARIFORMES

Scientific name	*Common name*	*Number*
Casuariidae:		
Casuarius casuarius aruensis	Aru cassowary	1
Casuarius uniappendiculatus occipitalis	Island cassowary	1
Casuarius uniappendiculatus uniappendiculatus	One-wattled cassowary	1
Dromiceiidae:		
Dromiceius novaehollandiae	Common emu	2

SPHENISCIFORMES

Scientific name	*Common name*	*Number*
Spheniscidae:		
Aptenodytes forsteri	Emperor penguin	2
Eudyptes chrysolophus	Macaroni penquin	2
Eudyptes cristatus	Rock-hopper penguin	1
Spheniscus demersus	Jackass penguin	3
Spheniscus humboldti	Humboldt penguin	2
Spheniscus magellanicus	Magellan penguin	2

PELECANIFORMES

Scientific name	*Common name*	*Number*
Pelecanidae:		
Pelecanus erythrorhynchus	White pelican	4
Pelecanus occidentalis californicus	California brown pelican	2
Pelecanus occidentalis occidentalis	Brown pelican	2
Pelecanus roseus	Rose-colored pelican	3
Sulidae:		
Sula leucogaster	Peruvian booby	1
Phalacrocoracidae:		
Phalacrocorax auritus albociliatus	Farallon cormcrant	1

CICONIIFORMES

Scientific name	*Common name*	*Number*
Ardeidae:		
Ardea herodias	Great blue heron	2
Hydranassa tricolor ruficollis	Louisiana heron	1
Leucophoyx thula	Snowy egret	5
Notophoyx novaehollandiae	White-faced heron	1
Nycticorax nycticorax hoactli	Black-crowned night heron	35
Cochleariidae:		
Cochlearius cochlearius	Boat-bill heron	1
Ciconiidae:		
Dissoura episcopus	Woolly-necked stork	1
Ibis cinereus	Malay stork	2
Jabiru mycteria	Jabiru	2
Leptoptilus crumeniferus	Marabou	1
Leptoptilus dubius	Indian adjutant	1
Leptoptilus javanicus	Lesser adjutant	2
Mycteria americana	Wood ibis	1
Threskiornithidae:		
Ajaia ajaja	Roseate spoonbill	4
Guara alba	White ibis	8
Guara alba × *G. rubra*	Hybrid white and scarlet ibis	1
Guara rubra	Scarlet ibis	1
Threskiornis melanocephala	Black-headed ibis	4
Threskiornis spinicollis	Straw-necked ibis	2
Phoenicopteridae:		
Phoenicopterus antiquorum	Old world flamingo	6
Phoenicopterus chilensis	Chilean flamingo	2
Phoenicopterus ruber	Cuban flamingo	1

ANSERIFORMES

Scientific name	*Common name*	*Number*
Anhimidae:		
Chauna chavaria	White-cheeked screamer	1
Chauna torquata	Crested screamer	5
Anatidae:		
Aix sponsa	Wood duck	4
Anas bahamensis	Bahama pintail	2
Anas brasiliensis	Brazilian teal	2
Anas domestica	Pekin duck	42
Anas platyrhynchos	Mallard duck	61
	White mallard duck	6
Anas rubripes	Black duck	5
Anser albifrons	American white-fronted goose	1
Anser cinereus domestica	Toulouse goose	4
Anseranus semipalmata	Australian pied goose	2
Aythya sp	Hybrid duck	1
Aythya valisineria	Canvasback duck	2
Branta canadensis	Canada goose	17
Branta canadensis occidentalis	White-cheeked goose	21
Branta canadensis × *Chen caerulescens*	Hybrid Canada goose × blue goose	2
Branta hutchinisii	Hutchin's goose	3
Branta hutchinsii minima	Cackling goose	3

Scientific name	*Common name*	*Number*
Anatidae—Continued		
Cairina moschata	Muscovy duck	9
Cereopsis novaehollandiae	Cape Barren goose	1
Chen atlantica	Snow goose	3
Chen caerulescens	Blue goose	3
Chenopis atrata	Black swan	11
Chloephaga leucoptera	Magellan goose	1
Coscoroba coscoroba	Coscoroba	2
Cygnopsis cygnoides	Domestic goose	1
Cygnus columbianus	Whistling swan	2
Cygnus melancoriphus	Black-necked swan	1
Dafila acuta	Pintail	8
Dafila spinicauda	Chilean pintail	1
Dendrocygna autumnalis	Black-bellied tree duck	3
Dendrocygna viduata	White-faced tree duck	3
Dendronessa galericulata	Mandarin duck	1
Mareca americana	Baldpate	1
Marila affinis	Lesser scaup	1
Marila collaris	Ring-necked duck	1
Metopiana peposaca	Rosy-billed pouchard	3
Nettion carolinense	Green-winged teal	3
Nettion formosum	Baikal teal	2
Philacte canagica	Emperor goose	2
Querquedula discors	Blue-winged teal	2
FALCONIFORMES		
Cathartidae:		
Cathartes aura	Turkey vulture	1
Coragyps atratus	Black vulture	3
Sarcoramphus papa	King vulture	2
Vultur gryphus	Andean condor	1
Sagittariidae:		
Sagittarius serpentarius	Secretary bird	2
Accipitridae:		
Buteo jamaicensis	Red-tailed hawk	4
Buteo lineatus lineatus	Red-shouldered hawk	1
Buteo melanoleucus	South American buzzard eagle	2
Buteo platypterus	Broad-winged hawk	1
Buteo poecilochrous	Red-backed buzzard	2
Buteo swainsoni	Swainson's hawk	1
Gypohierax angolensis	Fish-eating vulture	1
Gyps fulvus	Griffon vulture	1
Gyps rueppelli	Ruppell's vulture	2
Haliaeetus leucocephalus	Bald eagle	5
Haliaeetus leucogaster	White-breasted sea eagle	1
Haliastur indus	Brahminy kite	4
Harpia harpya	Harpy eagle	2
Milvago chimango	Chimango	3
Milvus migrans parasitus	African yellow-billed kite	2
Parabuteo unicinctus	One-banded hawk	1
Pithecophaga jefferyi	Monkey-eating eagle	1
Sarcogyps calvus	Indian Pondicherry vulture	1
Spiziastur melanoleucus	Black and white hawk eagle	1

Scientific name	*Common name*	*Number*
Falconidae:		
Daptrius americanus	Red-throated caracara	3
Falco mexicanus	Prairie falcon	1
Falco peregrinus anatum	Duck hawk	1
Falco sparverius	Sparrow hawk	6
Polyborus plancus	South American caracara	1

GALLIFORMES

Scientific name	*Common name*	*Number*
Cracidae:		
Crax fasciolata	Crested curassow	2
Crax rubra	Panama curassow	1
Crax sclateri	Sclater's curassow	1
Mitu mitu	Razor-billed curassow	1
Phasianidae:		
Argusianus argus	Argus pheasant	2
Catreus wallichii	Cheer pheasant	1
Chrysolophus amherstiae	Lady Amherst's pheasant	1
Chrysolophus pictus	Golden pheasant	4
Crossoptilon auritum	Blue-eared pheasant	1
Gallus sp	Bantam chicken	4
Gallus sp	Oriental silky bantam fowl	4
Gallus sp	Fighting fowl	3
Gallus gallus	Red jungle fowl	11
Gallus gallus	Hybrid red jungle fowl × bantam fowl	1
Gallus lafayetii	Ceylonese jungle fowl	1
Gallus sonneratii	Gray jungle fowl	1
Gennaeus albocristatus	White-crested kaleege	1
Gennaeus leucomelanus	Nepal kaleege	2
Gennaeus nycthemerus	Silver pheasant	3
Hierophasis swinhoii	Swinhoe's pheasant	2
Pavo cristatus	Peafowl	9
Phasianus torquatus	Ring-necked pheasant	2
Polyplectron napoleonis	Palawan peacock pheasant	1
Syrmaticus reevesi	Reeve's pheasant	2
Numididae:		
Acryllium vulturinum	Vulturine guinea fowl	1
Numida sp	Guinea fowl	2
Meleagrididae:		
Agriocharis ocellata	Ocellated turkey	4
Meleagris gallopavo	Wild turkey	2

GRUIFORMES

Scientific name	*Common name*	*Number*
Gruidae:		
Anthropoides virgo	Demoiselle crane	2
Balearica pavonina	West African crowned crane	2
Balearica regulorum gibbericeps	East African crowned crane	1
Grus leucauchen	White-naped crane	1
Grus leucogeranus	Siberian crane	2
Psophiidae:		
Psophia leucoptera	White-backed trumpeter	2

Scientific name	*Common name*	*Number*
Rallidae:		
Amaurornis phoenicurus	White-breasted rail	1
Armides cajanea	Wood rail	2
Fulica americana	American coot	6
Gallinula chloropus cachinnans	Florida gallinule	1
Cariamidae:		
Cariama cristata	Cariama or seriema	2

CHARADRIIFORMES

Scientific name	*Common name*	*Number*
Scolopacidae:		
Philohela minor	Woodcock	1
Recurvirostridae:		
Himantopus mexicanus	Black-necked stilt	2
Burhinidae:		
Burhinus bistriatus	South American thick-knee	2
Haematopodidae:		
Haematopus ostralegus	European oyster catcher	1
Charadriidae:		
Belanopterus chilensis	Chilean lapwing	2
Laridae:		
Larus argentatus	Herring gull	2
Larus delawarensis	Ring-billed gull	1
Larus dominicanus	Kelp gull	2
Larus novaehollandiae	Silver gull	8

COLUMBIFORMES

Scientific name	*Common name*	*Number*
Columbidae:		
Columba livia	Domestic pigeon	15
Ducula aenea	Green imperial pigeon	1
Ducula paulina	Celebian imperial pigeon	2
Gallicolumba luzonica	Bleeding-heart dove	1
Gallicolumba luzonica × *Turtur risorius*	Bleeding-heart dove × ring-necked dove hybrid	1
Geopelia cuneata	Diamond dove	1
Goura victoria	Victoria crowned pigeon	1
Streptopelia tranquebarica	Blue-headed ring dove	2
Turtur risorius	Ring-necked dove	32
Zenaida auriculata	South America mourning dove	1
Zenaida macroura	Mourning dove	2

PSITTACIFORMES

Scientific name	*Common name*	*Number*
Psittacidae:		
Agapornis lilianae	Red-faced love bird	1
Agapornis roseicollis	Rosy-faced love bird	2
Amazona aestiva	Blue-fronted parrot	1
Amazona auropalliata	Yellow-naped parrot	3
Amazona ochrocephala	Yellow-headed parrot	3
Amazona oratrix	Double yellow-headed parrot	6
Anodorhynchus hyacinthinus	Hyacinthine macaw	1
Ara ararauna	Yellow and blue macaw	1
Ara macao	Red, blue, and yellow macaw	4

Scientific name	Common name	Number
Psittacidae—Continued		
Aratinga euops	Cuban conure	1
Aratinga pertinax	Gray-headed conure	1
Calyptorhynchus magnificus	Banksian cockatoo	1
Ducorpsis sanguineus	Bare-eyed cockatoo	1
Kakatoe alba	White cockatoo	2
Kakotoe ducrops	Solomon Islands cockatoo	2
Kakatoe galerita	Large sulphur-crested cockatoo	3
Kakatoe leadbeateri	Leadbeater's cockatoo	1
Kakatoe moluccensis	Great red-crested cockatoo	1
Kakatoe sulphurea	Lesser sulphur-crested cockatoo	1
Lorius domicella	Rajah lory	2
Lorius garrulus	Red lory	1
Melopsittacus undulatus	Grass paroquet	23
Nestor notabilis	Kea	1
Nymphicus hollandicus	Cockatiel	2
Psittacula eupatria	Red-shouldered paroquet	1
Psittacula krameri	Kramer's paroquet	1
Psittacula longicauda	Long-tailed paroquet	1
CUCULIFORMES		
Musophagidae:		
Touraco corythaix	South African turaco	2
Touraco donaldsoni	Donaldson's turaco	1
STRIGIFORMES		
Tytonidae:		
Tyto alba pratincola	Barn owl	3
Strigidae:		
Bubo virginianus	Great horned owl	9
Ketupa ketupa	Malay fishing owl	1
Otus asio	Screech owl	3
Strix varia varia	Barred owl	11
TROGONIFORMES		
Trogonidae:		
Pharomachrus mocino	Quetzal	1
CORACIIFORMES		
Alcedinidae:		
Dacelo gigas	Kookaburra	2
Coraciidae:		
Anthracoceros coronatus	Pied hornbill	2
Tockus birostris	Gray hornbill	1
Momotidae:		
Momotus lessoni	Motmot	1
PICIFORMES		
Capitonidae:		
Megalaima asiatica	Blue-throated barbet	1

Scientific name	*Common name*	*Number*
Ramphastidae:		
Aulacorhynchus sulcatus sulcatus	Groove-billed toucanet	1
Pteroglossus aracari	Black-necked aracari	2
Pteroglossus torquatus	Aracari toucan	1
Ramphastos ariel	Ariel toucan	2
Ramphastos carinatus	Sulphur-breasted toucan	3
Ramphastos culminatus	White-breasted toucan	1
Ramphastos piscivorus	Toco toucan	1
PASSERIFORMES		
Cotingidae:		
Rupicola rupicola	Cock-of-the-rock	2
Dicruridae:		
Dissemurus paradiseus	Giant racquet-tailed drongo	5
Corvidae:		
Callocitta formosa	Mexican jay	1
Cissilopha yucatanica	Yucatan blue jay	1
Corvus brachyrhynchos	American crow	4
Corvus corax principalis	Northern raven	2
Corvus cornix	Hooded crow	1
Corvus cryptoleucus	White-necked raven	1
Corvus insolens	Indian crow	2
Cyanocitta cristata	Blue jay	7
Cyanocorax chrysops	Urraca jay	1
Cyanopica cyana	Azure-winged pie	1
Garrulus lanceolatus	Black-throated jay	1
Gymnorhina hypoleuca	White-backed piping crow	1
Pica nuttalli	Yellow-billed magpie	1
Pica pica hudsonica	American magpie	2
Urocissa caerulea	Formosan red-billed pie	2
Paradiseidae:		
Ailuroedus crassirostris	Australian catbird	1
Ptilonorhynchus violaceus	Satin bowerbird	1
Timaliidae:		
Garrulax bicolor	White-headed laughing thrush	2
Garrulax pectoralis picticollis	Chinese collared laughing thrush	1
Pycnonotidae:		
Heterophasia capistratra	Black-headed sibia	4
Pycnonotus analis	Yellow-vented bulbul	1
Pycnonotus leucogenys	White-cheeked bulbul	2
Mimidae:		
Mimus polyglottos	Mockingbird	4
Mimus polyglottos leucopterus	Western mockingbird	1
Turdidae:		
Geokichla citrina	Orange-headed ground thrush	2
Platycichla flavipes	Yellow-footed thrush	1
Turdus grayi	Bonaparte's thrush	1
Turdus migratorius	Eastern robin	4

Scientific name	*Common name*	*Number*
Sturnidae:		
Galeopsar salvadorii	Crested starling	1
Gracula religiosa	Hill mynah	1
Graculipica melanoptera	White starling	1
Lamprocolius splendens	Splendid glossy starling	4
Lamprotornis australis	Burchelli's glossy starling	4
Sturnia malabarica	Pied mynah	1
Sturnus vulgarus	Starling	1
Ploceidae:		
Aidemosyne cantans	Tawny waxbill	6
Aidemosyne malabarica	Indian silver-bill	2
Aidemosyne modesta	Plum-head finch	2
Alisteranus cinctus	Parson finch	2
Amadina fasciata	Cut-throat weaver finch	7
Cayleyna picta	Painted finch	1
Diatropura procne	Giant whydah	2
Estrilda astrild	Red-eared waxbill	8
Estrilda cinerea	Common waxbill	16
Euplectes franciscana	Bishop weaver	5
Hypochera ultramarina	Combasou or indigo bird	1
Lagonosticta senegalla	African fire finch	2
Lonchura leucogastroides	Bengallee finch	2
Munia maja	White-headed munia	2
Munia malacca	Black-throated munia	1
Munia oryzivora	Java sparrow	5
Munia punctulata	Spice finch	3
Neopoephila personata	Masked finch	2
Ploceus baya	Baya weaver	2
Ploceus intermedius	Black-cheeked weaver	2
Ploceus vitellinus	Vitelline masked weaver	7
Poephila cuticauda	Long-tailed finch	1
Poephila gouldiae	Gouldian finch	1
Quelea quelea	Red-billed weaver	5
Sporaeginthus melopodus	Orange-cheeked waxbill	10
Steganua paradisea	Paradise whydah	10
Stictoptera bichenovii	Binchenov's finch	1
Taeniopygia castanotis	Zebra finch	10
Uraeointhus bengalus	Cordon bleu finch	10
Coerebidae:		
Cyanerpes cyaneus	Blue honey creeper	15
Icteridae:		
Agelaius assimilis	Cuban red-winged blackbird	2
Amblyrhamphus holosericeus	Scarlet-headed blackbird	1
Cassiculus melanicterus	Mexican cacique	1
Gymnomystax mexicanus	Giant oriole	1
Icterus bullocki	Bullock's troupial	1
Molothrus bonariensis	Shiny cowbird	1
Notiopsar curaesus	Chilean blackbird	2
Quiscalis quiscula	Purple grackle	2
Trupialis defilippi	Military starling	4
Xanthocephalus xanthocephalus	Yellow-headed blackbird	2

Scientific name	*Common name*	*Number*
Thraupidae:		
Calospiza inornata languens	Plain-colored tanager	1
Ramphocelus carbo	Silver-beaked tanager	2
Ramphocelus dimidiatus	Crimson tanager	2
Ramphocelus flammigerus	Yellow tanager	2
Ramphocelus passerini	Passerini tanager	1
Tanagra darwini	Darwin's tanager	2
Thraupis cana	Blue tanager	3
Fringillidae:		
Aegintha temporalis	Sydney waxbill	12
Carpodacus mexicanus	Mexican house finch	6
Carpodacus purpureus californicus	California purple finch	1
Coryphospingus cucullatus	Red-crested finch	1
Cyanocompsa argentina	Argentine blue grosbeak	2
Diuca diuca	Diuca finch	1
Lophospingus pusillus	Black-crested finch	2
Melopyrrha nigra	Cuban bullfinch	2
Melospiza melodia	Song sparrow	2
Paroaria cucullata	Brazilian cardinal	2
Paroaria gularis nigro-genis	Black-eared cardinal	3
Passerella iliaca	Fox sparrow	1
Passerina amoena	Lazuli bunting	1
Passerina cyanea	Indigo bunting	2
Passerina leclancheri	Leclancher's bunting	2
Passerina versicolor	Blue bunting	1
Pheucticus aureoventris	Black and yellow grosbeak	2
Phrygilus alaudinus	Chilean lark finch	1
Phrygilus fruticeti	Mourning finch	4
Phrygilus gayi	Gay's gray-headed finch	1
Plectrophenax nivalis	Snow bunting	2
Poospiza torquata	Ringed warbling finch	2
Richmondina cardinalis	Cardinal	3
Serinus canarius	Canary	13
Serinus canarius × *Carduelis mexicana*	Canary × siskin hybrid	2
Serinus icterus	Green singing finch	1
Sicalis flaveola	Mysto finch	1
Sicalis luteola	Saffron finch	3
Sicalis minor	Lesser yellow finch	4
Spinus tristis	American gold finch	1
Spinus uropygialis	Chilean siskin	1
Sporophila aurita	Hick's seed-eater	1
Sporophila gutturalis	Yellow-billed seed-eater	2
Sporophila melanocephala	Black-headed seed-eater	2
Tiaris olivacea	Mexican grassquit	2
Volatinia jacarini	Blue-black grassquit	1
Zonotrichia albicollis	White-throated sparrow	2
Zonotrichia capensis	Chingolo	4

REPTILES

LORICATA

Scientific name	*Common name*	*Number*
Crocodylidae:		
Alligator mississipiensis	Alligator	29
Alligator sinensis	Chinese alligator	3
Caiman latirostris	Broad-snouted caiman	1
Caiman sclerops	Spectacled caiman	3
Crocodylus acutus	American crocodile	3
Crocodylus cataphractus	Narrow-nosed crocodile	1
Crocodylus niloticus	African crocodile	2
Crocodylus palustris	"Toad" crocodile	2
Crocodylus porosus	Salt-water crocodile	1
Crocodylus rhombifer	Cuban crocodile	1
Osteolaemus tetraspis	Broad-nosed crocodile	3
Lacertidae:		
Lacerta muralis	Wall lizard	2
Lacerta ocellata	Eyed lizard	2
Iguanidae:		
Anolis carolinensis	False chameleon	125
Basiliscus vittatus	Basilisk	2
Phrynosoma cornutum	Horned lizard	6
Sceloporus undulatus	Pine or fence lizard	6
Anguidae:		
Ophisaurus ventralis	Legless lizard or glass "snake"	1
Agamidae:		
Uromastix acanthinurus	North African spiny-tailed lizard	2
Helodermatidae:		
Heloderma horridum	Mexican beaded lizard	2
Heloderma suspectum	Gila monster	6
Teiidae:		
Tupinambis nigropunctatus	Black tegu	5
Scincidae:		
Eumeces fasciatus	Blue-tailed skink	2
Tiliqua scincoides	Blue-tongued lizard	1
Varanidae:		
Varanus sp	Philippine monitor	1
Varanus komodoensis	Komodo dragon	1
Varanus niloticus	African monitor	2
Varanus salvator	Sumatran monitor	3
Zonuridae:		
Zonurus giganteus	African spiny lizard	5

SERPENTES

Boidae:		
Constrictor constrictor	Boa constrictor	1
Constrictor imperator	Central American boa	10
Constrictor mexicanus	Southern boa	1
Epicrates cenchris	Rainbow boa	13
Epicrates crassus	Salamanta	1
Epicrates striatus	Haitian boa	1

Scientific name	*Common name*	*Number*
Boidae—Continued		
Eunectes murinus	Anaconda	1
Python molurus	Indian rock python	17
Python regius	Ball python	1
Python reticulatus	Regal python	5
Colubridae:		
Boiga blandingi	Brown tree snake	1
Carphophis amoena	Worm snake	1
Coluber constrictor mormon	California racer	1
Diadophis punctatus	Ring-necked snake	2
Duberria cana	South African mole snake	2
Elaphe guttata	Corn snake	2
Elaphe obsoleta	Pilot snake	7
Elaphe quadrivittata	Chicken snake	1
Heterodon contortrix	Hog-nosed snake	1
Lampropeltis getulus boylii	Boyle's king snake	3
Lampropeltis triangulum triangulum	Milk snake or spotted adder	1
Masticophis taeniatus	Lined Mexican racer	1
Natrix sp	Water snake	12
Natrix piscator	Checkered keel back	3
Natrix sipedon	Banded water snake	3
Oxybelis acuminatus	Pike-head snake	1
Ptyas mucosus	Indian rat snake	1
Storeria dekayi	De Kay's snake	2
Thamnophis macrostemma	Mexican garter snake	1
Thamnophis ordinoides	Western garter snake	1
Thamnophis sirtalis	Garter snake	7
Thrasops jacksonii	Black tree snake	1
Elapidae:		
Dendroaspis viridis	Green mamba	1
Naja melanoleuca	West African cobra	2
Viperidae:		
Vipera berus	European viper	2
Crotalidae:		
Agkistrodon mokeson	Copperhead snake	3
Agkistrodon piscivorus	Cotton-mouth moccasin	2
Bothrops lanceolatus	Fer de-lance	1
Crotalus atrox	Texas diamond-backed rattlesnake	2
Crotalus horridus	Eastern diamond-backed rattlesnake	6
Crotalus horridus horridus	Timber rattlesnake	1
Crotalus oreganus	Pacific rattlesnake	1

TESTUDINATA

Scientific name	*Common name*	*Number*
Chelydidae:		
Batrachemys nasuta	South American side-necked turtle	2
Hydraspis sp	Cágado or South American snake-necked turtle	1
Hydromedusa tectifera	South American snake-necked turtle	16
Platemys platycephala	Flat-headed turtle	1

Scientific name	*Common name*	*Number*
Kinosternidae:		
Kinosternon subrubrum	Mud or musk turtle	5
Sternotherus odoratus	Mud or musk turtle	4
Chelydridae:		
Chelydra serpentina	Snapping turtle	4
Macrochelys temminckii	Alligator snapping turtle	1
Testudinidae:		
Batagur baska	Indian fresh-water turtle	1
Chrysemys picta	Painted turtle	7
Clemmys guttata	Spotted turtle	6
Clemmys insculpta	Wood turtle	3
Cyclemys amboinensis	Kura kura box turtle	1
Graphtemys barbouri	Barbour's turtle	6
Malaclemys centrata	Diamond-backed turtle	5
Pelomedusa galeata	Common African water tortoise	1
Pseudemys concinna	Cooter	1
Pseudemys elegans	Mobile terrapin	12
Pseudemys ornata subsp	Central American terrapin	6
Pseudemys rugosa	Cuban terrapin	1
Terrapene carolina	Box turtle	50
Terrapene major	Florida box turtle	4
Testudo ephippium	Duncan Island tortoise	1
Testudo hoodensis	Hood Island tortoise	2
Testudo tabulata	South American tortoise	1
Testudo tornieri	Soft-shelled land tortoise	1
Testudo vicina	Albemarle Island tortoise	5
Trionychidae:		
Amyda ferox	Soft-shelled turtle	6
Amyda triunguis	West African soft-shelled turtle	1

AMPHIBIA

CAUDATA

Scientific name	*Common name*	*Number*
Salamandridae:		
Triturus cristatus danubialis	Crested newt	12
Triturus pyrrhogaster	Red Japanese salamander	2
Triturus torosus	Giant newt	5
Triturus vulgaris	Common European salamander	3
Amphiumidae:		
Amphiuma means	Congo eel	1
Ambystomidae:		
Ambystoma opacum	Marbled salamander	1
Ambystoma tigrinum	Tiger salamander	30
Cryptobranchidae:		
Megalobatrachus japonicus	Giant Japanese salamander	1
Sirenidae:		
Siren lacertina	Sirene	1

SALIENTIA

Scientific name	*Common name*	*Number*
Dendrobatidae:		
Atelopus varius cruciger	Yellow atelopus	20
Dendrobates auratus	Arrow-poison frog	52
Dendrobates wittei	Red and black frog	1
Bufonidae:		
Bufo americanus	Common toad	1
Bufo empusus	Sapo de concha	4
Bufo marinus	Marine toad	10
Bufo peltacephalus	Cuban giant toad	2
Discoglossidae:		
Bombina bombina	Red-bellied toad	12
Ceratophrydae:		
Ceratophrys ornato	Horned frog	2
Hylidae:		
Hyla sp	Tree frog	1
Hyla crucifer	Tree frog	2
Pipidae:		
Pipa pipa	Surinam toad	2
Xenopus laevis	African clawed frog	2
Ranidae:		
Rana clamitans	Green frog	2
Rana pipiens	Leopard frog	10
Rana sylvatica	Wood frog	1

FISHES

Anabas testudineus	Climbing perch	5
Anoptichthys jordani	Blind characin	12
Barbus everetti	Clown barb	8
Barbus partipentazona	Banded barb	17
Brachydanio albolineatus	Pearl danio	2
Brachydanio rerio	Zebra danio	3
Carassius auratus	Goldfish	2
Channa asiatica	Snakehead	1
Corydoras sp	South American catfish	3
Danio malabarica	Blue danio	2
Gymnocorymbus ternetzi	Black tetra	2
Hippocampus sp	Sea horse	2
Hyphessorbrycon innesi	Neon tetra	1
Kryptopterus bicirrhis	Glass catfish	1
Lebistes reticulatus	Guppy	100
Lepidosiren paradoxa	South American lung fish	2
Limia vittata	Cuban limia	10
Mesonauta insignis	-------------------------------	11
Mollienisia sphenops	Victory molly	8
Monocirrhus polyacanthus	Leaf fish	2
Otocinclus affinus	Sucker catfish	6
Platypoecilus maculatus	Red moon	8
Poecelobycon unifasciatus	Pencil fish	1

Scientific name	*Common name*	*Number*
Pristella riddlei	Tetra	12
Protopterus annectens	African lungfish	2
	Black wagtail	1
ARACHNIDS		
Eurypelma sp	Tarantula	2
Latrodectus mactans	Black widow spider	1
INSECTS		
Blabera sp	Giant cockroach	100
MOLLUSKS		
Achatina achatina	Giant land snail	9
Achatina fulica	Zanzibar-Madagascar snail	3

Respectfully submitted.

W. M. Mann, *Director.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

APPENDIX 8

REPORT ON THE ASTROPHYSICAL OBSERVATORY

Sir: I have the honor to submit the following report on the operations of the Astrophysical Observatory for the fiscal year ended June 30, 1948:

The Observatory organization comprises the office of the Director (which includes three shops for the preparation of equipment: the wood, glass, and metal shops) and two research divisions: (1) the Division of Astrophysical Research and (2) the Division of Radiation and Organisms.

In September 1947 W. H. Hoover was promoted to be Chief of the Division of Astrophysical Research. Mr. Hoover has been a member of the Observatory staff since 1923. It is a sad duty to record the death on December 17, 1947, of Dr. Earl S. Johnston, Chief of the Division of Radiation and Organisms. Dr. Johnston joined the division at its beginning in 1929 and was responsible for a large portion of its development in recent years. Before the close of the fiscal year the Observatory was fortunate in completing arrangements to have Dr. Robert B. Withrow, of Purdue University, succeed Dr. Johnston as Chief of the Division, beginning September 1, 1948. During the year Dr. R. L. Weintraub, biochemist, and L. B. Clark, expert glass blower and technologist, transferred to National Defense agencies.

(1) DIVISION OF ASTROPHYSICAL RESEARCH

The year may be characterized as one of exploration and development since considerable effort was expended in search for a suitable high-altitude site for a third solar station, and in planning and preparing new equipment. It is proposed at the new station not only to conduct routine solar-constant observations, but also to test new electronic equipment and to conduct special researches. One project planned is a day-to-day study of changes in the infrared band of ozone at 9 microns wave length. For this work a special double spectroscope designed by Dr. Abbot, research associate, is being constructed by the Gaertner Scientific Corporation. New mirrors, aluminized and coated with magnesium fluoride, for both coelostat and spectrobolometer are on order. A fused-quartz prism, very free of bubbles, has been completed, also a new vacuum bolometer. The bolometer, planned and built by L. B. Clark, is so designed that the vacuum around the bolometer strips will not deteriorate with time. Preliminary tests show it to be about three times as sensitive as the bolometers we are currently using.

Work at Washington.—The observations and computations from the Montezuma and Table Mountain field stations were carefully checked and appraised. Results for the calendar year 1947 were tabulated in the form given in table 24 of volume 6 of the Annals of the Astrophysical Observatory.

Arrangements were completed for the preparation of new and completely revised editions of the Smithsonian Meteorological Tables and the Smithsonian Physical Tables. Work on the Meteorological Tables is now in progress under the editorship of R. J. List, of the United States Weather Bureau. The Physical Tables will be edited beginning September 1, 1948, by Dr. William E. Forsythe, formerly of the Nela Research Laboratories, Cleveland, Ohio.

The sun and sky radiation studies at Camp Lee, Va., under contract with the Office of the Quartermaster General, were terminated on January 1, 1947, at the completion of 2 full years of observations. These observations included continuous records of the total sun and sky radiation, and of the relative energy in the ultraviolet, visible, and infrared portions of the spectrum, as received on a horizontal surface, on a plane 45° to the east, and on a plane 45° to the south. Part of the instrumental equipment was left at Camp Lee, and observations are being continued there under the sponsorship of the Camp Lee Quartermaster Board. A total of 16 reports were submitted to the Office of the Quartermaster General, summarizing the Smithsonian observations.

Under an extension of the contract with the Office of the Quartermaster General, equipment for radiation measurements similar to those made at Camp Lee was prepared for the temporary sea-level station (Miami, Fla.), and for the high-altitude, dry station at Montezuma, Chile. These preparations were under the direction of Mr. Hoover, chief of the division. One difficulty encountered in the Camp Lee work was the great amount of time required to read and sum up the many daily records, and special efforts were made to devise an automatic integrator. Mr. Hoover succeeded in working out the details of such a device, and three were built by the instrument maker, Mr. Talbert. The device is now in successful operation at the Miami station. It separately sums up the reading of four different recording pyrheliometers as registered on a four-point Brown electronic potentiometer. By simply taking the readings on each of four counters, the total radiation received by each of the four pyrheliometers is obtained. The results have repeatedly been checked against a complete reading of the record, and the integrator has proved surprisingly accurate.

Dr. Abbot, research associate of the Observatory, has made further contributions in his studies of relationships between solar changes and weather (see list of publications below). Mr. Hildt, mentioned in last year's report as assisting Dr. Arctowski in his researches concerned with the solar and terrestrial atmospheres, found it necessary to end this work on October 1, 1947. Miss Joyce Wilson substituted for Mr. Hildt for the remainder of the fiscal year.

Work in the field.—Regular observations for the determination of the solar constant were continued throughout the year at two high-altitude stations, Montezuma, Chile (9,000 ft.) and Table Mountain, Calif. (7,500 ft.). In addition, at Montezuma preparations were made for exposures of certain textiles and observations of the amount and quality of sun and sky light, similar to the work now in progress at the Miami station. However, unexpected delay was encountered in the transfer of part of the equipment to Montezuma, so that these exposures and observations had not yet been started at the close of the fiscal year.

As stated in last year's report, a cooperative program was arranged between the General Motors Corp., the Quartermaster Department, and the Smithsonian Institution for exposures and radiatiton measurements to be carried out at the General Motors Test Field at Miami, Fla. The program also included the mounting and servicing of the panels and filter boxes by the South Florida Test Service, under the direction of E. M. DeNoon. In November 1947, panel exposures both in the open and under filters, at an angle of 45° to the south, were begun at Miami. The measuring instruments and the filters are similar to those used at Camp Lee, Va. In addition, the spectrobolometer formerly at the Tyrone, N. Mex., station has been mounted and adjusted. Whenever the sky is sufficiently clear of clouds, bolographs are taken just as in our usual solar-constant program. From these bolographs we obtain valuable data concerning sea-level water-vapor conditions, as well as additional data on the relative distribution of energy throughout the spectrum as received from direct sunlight. The complete program was started in December 1947.

In July 1947 the Director began a tour in search of the most promising high-altitude site to which to transfer the Miami spectrobolometric equipment at the conclusion of our sea-level observations. It was thought that possibly somewhere in the high plateau region of Mexico sufficiently cloudless and pure skies might be found. With the cordial cooperation of the staff of the National Observatory of Mexico, at Tacubaya, many records of sky conditions were examined and several promising sites were visited. It is regretted that though the climate was uniformly delightful and invigorating, none of these sites proved to be sufficiently cloudless. Floating clouds are very prevalent.

In September, while vacationing in Honolulu, the Director learned of a site on the island of Hawaii where the annual rainfall is less than 10 inches and the skies described as remarkably clear. He visited that location where, at an altitude of 6,500 ft., he found a road, abundant water supply, electric power and telephone already installed, and skies which may prove to be clear and uniform from day to day.

In October Dr. Abbot and A. F. Moore visited the region of southern California near the Nevada border, including Clark Mountain (7,900 ft.), where the annual precipitation is 3 inches. They encountered excellent skies in this region.

Since tests covering an extended period are the only safe criteria for determining a satisfactory site for a solar station, Mr. Hoover in May 1948 installed a recording Eppley pyrheliometer at each of the three following promising sites: (1) Torreon, Coahuila, Mexico; (2) Mountain Pass, Calif., near Clark Mountain; and (3) Pohakuola, Island of Hawaii. The instruments are operated through the kind cooperation of men living near the sites. The records for the month of June 1948 indicate Clark Mountain as having the best skies thus far.

Dr. Abbot and the Director spent a month beginning August 10, 1947, at the Mount Wilson Observatory, Calif., having planned to assist each other on two projects. One project was to redetermine the Smithsonian standard scale of solar radiation. We reconditioned, remounted, and adjusted our standard double water-flow pyrheliometer, last used in 1934, and made a series of careful comparisons between it and two substandard silver-disk pyrheliometers which we had carried by hand from Washington. The mean of 33 comparisons agrees within 1 part in 1,000 with the results of 1934 and 1932. This confirms our belief that the scale of an individual silver-disk pyrheliometer with ordinary care will remain unchanged over a long period of years.

The second project was a continuation of Dr. Abbot's previous work to determine the energy spectra of some of the brighter stars, with the aid of the 100-inch Mount Wilson telescope. Dr. Abbot's sensitive radiometer, now under excellent control, permitted actual measurements on eight different stars at eight different wave lengths. Since the percentage accidental error was rather large, only the general forms of these curves were determined. Dr. Abbot has encouraging plans for improvement in the measurements and he hopes to repeat this project in the near future.

(2) DIVISION OF RADIATION AND ORGANISMS

Owing to the illness and death of the chief of the division, Dr. Earl S. Johnston, and to changes in personnel, the research program in progress at the beginning of the year was necessarily altered and somewhat curtailed. Leonard Price, now the senior staff member of the division, has as far as possible arranged to bring current projects to satisfactory completion and to undertake no new projects except those of short duration.

Dr. Weintraub, after his transfer to a National Defense agency, continued periodic visits to the division to complete certain phases of his work. In these visits Mr. Price found his advice and aid of much value in rounding out the current experimental work. The following summarizes the work accomplished:

Several years ago, Dr. McAlister developed in the division an instrument for measuring accurately and quickly by spectroscopic means the carbon dioxide content of a volume of gas. Dr. Johnston later made certain modifications and carefully tested the instrument. Dr. Weintraub and Mr. Price subsequently used it in a study of the effect of plant growth regulators on the respiration of potato tubers. After the construction of a larger respiration chamber, a similar study was started using broad-leaf plants. This project was nearly completed at the close of the year.

Two new thermostats, installed early in the year, aided greatly in the control of environmental factors in germination studies using lettuce seeds. The effects of temperature, light, composition of atmosphere, and composition of substrate have been studied individually and in combination. Two phases of this study are completed and a third nearly completed.

Considerable progress was made in studies of the developmental physiology of grass seedlings. Growth curves for both mesocotyls and coleoptiles of plants grown under various combinations of controlled environmental conditions have been obtained. Plants grown in various salt solutions have yielded information on cation and anion effects. Salts show a retarding effect during initial germination which is then followed by a period of extended growth beyond that of plants grown in the absence of salts. The retardation and extended growth periods are proportional, within limits, to the concentration of the salt used. Several papers on these developmental physiology studies are in preparation.

The histological study of the mesocotyl, which was undertaken to explain the gross morphology effects of various environmental conditions, was continued for only part of the year. Being a long-range project, it was abandoned to permit the completion of other projects that were further advanced. However, before this work was stopped the cellular development of mesocotyls of etiolated corn seedlings had been charted.

A report is in preparation on the study of the effects of various fungicides on the germination and development of grass seedlings. Experimentation for this problem has been completed.

PUBLICATIONS

The following publications relating to the work of the Observatory were issued during the year:

Abbot, C. G. Precipitation affected by solar variation. Smithsonian Misc. Coll., vol. 107, No. 9, August 1947.

Abbot, C. G. A revised analysis of solar-constant values. Smithsonian Misc. Coll., vol. 107, No. 10, August 1947.

Abbot, C. G. 1947–1948 report on the 27.0074-day cycle in Washington precipitation. Smithsonian Misc. Coll., vol. 110, No. 4, March 1948.

Abbot, C. G., Solar variation attending West Indian hurricanes. Smithsonian Misc. Coll., vol. 110, No. 1, April 1948.

Abbot, C. G. Magnetic storms, solar radiation, and Washington temperature departures. Smithsonian Misc. Coll., vol. 110, No. 6, June 1948.

Abbot, C. G., and Aldrich, L. B. Energy spectra of some of the brighter stars. Smithsonian Misc. Coll., vol. 107, No. 19, February 1948.

Aldrich, L. B., and Abbot, C. G. Smithsonian pyrheliometry and the standard scale of solar radiation. Smithsonian Misc. Coll., vol. 110, No. 5, April 1948.

Aldrich, L. B., and associates: Reports to the Office of the Quartermaster General on Camp Lee studies. (Report No. 12 through No. 15, and special report of May 17, 1948.)

Weintraub, R. L. The influence of light on chemical inhibition of lettuce seed germination. Smithsonian Misc. Coll., vol. 107, No. 20, May 1948.

Weintraub, R. L., and Price, L. Inhibition of plant growth by emanations from oils, varnishes, and wood. Smithsonian Misc. Coll., vol. 107, No. 17, March 1948.

Weintraub, R. L., and Price, L. Influence of illumination on reducing sugar content of etiolated barley and oat seedlings. Smithsonian Misc. Coll., vol. 110, No. 2, March 1948.

Respectfully submitted.

L. B. Aldrich, *Director.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

APPENDIX 9

REPORT ON THE NATIONAL AIR MUSEUM

SIR: I have the honor to submit the following report on the operations of the National Air Museum for the fiscal year ended June 30, 1948.

ESTABLISHMENT

Although the National Air Museum came into being as a new bureau of the Smithsonian Institution on August 12, 1946, through the enactment of Public Law 722, and an organizational and survey program was inaugurated shortly thereafter, actual operations of the bureau in its own right did not begin until August 1, 1947, one month after the beginning of the fiscal year. On that date the authorized appropriation of $50,000 for National Air Museum purposes became available to the Institution.

Thereupon, and in accordance with a previously prepared plan of operations, there was effected by administrative action the interbureau transfer of the Institution's aeronautical collection and the staff charged with its care, from the United States National Museum to the National Air Museum. As a matter of record the Smithsonian Institution has been gathering and safeguarding significant aeronautical materials for over 70 years. At the time of the transfer this nucleus for an air museum consisted of over 3,500 objects, comprising the most valuable collection of its kind in the United States, or, in fact, in the world. By this transfer the National Air Museum began its active life with full responsibility for the proper operation of a "going" aeronautical museum. Until it has a building of its own, the Air Museum has assigned for its use the metal hangar known as the Aircraft Building and, in addition, a certain amount of exhibition, office, and storage space in the Arts and Industries Building of the National Museum. The Air Museum will share, too, with its affiliates the various auxiliary services of the Smithsonian Institution.

On completion of the transfer of the aeronautical collections, administrative action was begun to provide the nucleus for an adequate staff for the new bureau. By March 1948 a force of seven persons (an addition of five to the original staff of two) was actively engaged in the many ramifications of the bureau's work.

Another matter given early attention in establishing the Air Museum was that of obtaining working quarters. These were provided in the West-South Range of the Arts and Industries Building of the National Museum and were available to the staff beginning June 15, 1948.

ADVISORY BOARD

Two meetings of the Air Museum's Advisory Board were held during the year, on August 19, 1947, and April 15, 1948, respectively. The problems of major concern to the Board this year were the acquisition of a storage depot for the temporary safekeeping of Air Museum material, and the determination of a suitable land site and building for the Air Museum. Both meetings of the Board centered largely on these two problems.

Prior to the August meeting a careful study had been made by the Air Museum's staff and by Mr. Loening, Board member, of several proposed storage depots. As a result a recommendation was made to the Board at the August meeting suggesting the selection of a part of the Douglas aircraft plant built during World War II and located on the outskirts of Park Ridge, Ill., about 20 miles northwest of Chicago. After due deliberation, including consideration of the fact that aeronautical museum material gathered by the United States Air Force for the National Air Museum was stored in this plant, the Board accepted the recommendation and by resolution directed that "the Chairman plan the operations of the National Air Museum in such a way that it will be prepared to take over and operate the storage facility at Park Ridge . . ."

In considering the problem of sites and a building for the Air Museum (the planning of which was authorized by law establishing the National Air Museum) the merits and advantages of various locations in the Nation were fully considered at the August 1947 Board meeting. The discussion led to the unanimous adoption of a resolution that "the National Air Museum should be located in Washington, and that search be made for sites which are to be submitted to the Advisory Board for approval as to location and adequacy in size."

Regarding an appropriate building for the Air Museum, the Board discussed at length the scope of the aeronautical collections to be assembled, the quantity of full-size historical and irreplaceable aircraft that merited consideration for a place in the future building, and the many factors involved in the maintenance, exhibition, and preservation of the collection. To further the study of the building problem the Board at its August 1947 meeting directed the Chairman to enlist the aid of the Public Buildings Administration of the Federal

Works Agency and to submit a report at the next Board meeting. Following a full and detailed discussion of this report, the Advisory Board approved the basic study and building plan presented and instructed the Chairman to proceed with the building study to determine costs.

PLANNING

STORAGE OF MUSEUM MATERIAL

Immediately following the selection by the Advisory Board of a portion of the Douglas plant near Park Ridge, Ill., for the storage of Air Museum material, negotiations were begun to obtain this facility. Following the termination of World War II this Douglas plant, which had been built during the war by the Government, was taken over by the U. S. Air Force and used in part as a storage facility and in part as headquarters of the Air Arm of the Illinois National Guard. Subsequently, control and management of the property was placed in the hands of the Air Defense Command of the United States Air Force, where it rested at the close of the year.

While negotiations for storage space in this building were under way, attention was given to plans for the Museum's operating organization at Park Ridge. The protection, preservation, and maintenance of the stored Air Museum material will constitute the principal responsibilities of this field organization. There is planned, therefore, for this field service a staff of 14, consisting of an associate curator with administrative and aircraft-maintenance experience, in charge, an aircraft technician, 10 guards, and 2 skilled laborer helpers.

MUSEUM SITE AND BUILDING

As indicated earlier in this report real progress was made during the year on the investigation of sites and a building for the Air Museum. The staff worked closely with the Office of Design and Construction of the Public Buildings Administration, contributing realistic concepts of a functional museum structure from knowledge gained through many years' experience in the engineering and industrial museum field. The staff furnished, too, much factual material representing considered judgment as to the essential requirements of the proposed building. In this connection the incorporation of a place of honor for the Wright Brothers' original aeroplane of 1903 was given full consideration. The advice and suggestions of Mr. Loening, Board member, regarding this important matter were most helpful.

The entire museum structure will require in excess of 500,000 square feet of exhibition area, providing for an expected initial collection of some 200 full-size aircraft, and for future expansion of the collection.

In addition there will be incorporated within the structure the usual space for offices, laboratories, library, auditorium, manufacturers' display rooms, and shops, as well as facilities for building maintenance and operation.

CURATORIAL ACTIVITIES

The curator, Paul E. Garber, reports on the year's work as follows:

EXHIBITION

The close of the fiscal year finds the exhibits in greatly improved condition. All full-size aircraft were given a thorough cleaning; several required minor repairs; four engines were reconditioned and remounted. The exhibition of many propellers was improved. The insignia which provide a colorful border to the walls of the Aircraft Building were touched up. A number of bases and cases were renovated and numerous scale models were repaired. At the suggestion of Gen. Frank Lahm and with the advice and assistance of Orville Wright, the lever which controls the balance and steering on the Wright Brothers' Military Flyer of 1909 was remodeled to conform with its condition when in active service. The incomplete parts of the John J. Montgomery gliders of 1905 and 1911 which had been accessioned the previous year were partly assembled. The series of frames containing the illustrated story of the Wright Brothers received additional drawings and photographs depicting more facts in this chronicle. Two large cased exhibits were formed to group engines of types used by the "Early Birds" (pioneer flyers of 1903–16) and those of World War I. The gondola of the balloon *Explorer–2*, which 13 years after its ascent still holds the world's absolute manned altitude record, had its rigging elevated to make a more understandable display. The exhibition of the Norden bombsight by which the atomic bomb was directed at Hiroshima was improved by adding two large photographs to illustrate its destructive effect. Extensive rearrangements of cases effected improvements in space and groupings, and a program of relabeling provided better captions for numerous items.

Several special exhibits were prepared: The first use of aircraft for polar exploration was undertaken by Salamon Andrée and two companions, 1897. Their heroic effort was commemorated by the Air Museum on the fiftieth anniversary of their departure. During the month of August the U. S. Air Force displayed current flight equipment including engines, ordnance, instruments, and training devices. The featured item was a Lockheed P–80 jet-powered fighter. The National Air Museum prepared a historic aeronautic display for Air

Force Day at Bolling Field, D. C. When the Navy's Douglas *Skystreak* established a new world speed record of 650.6 miles per hour on August 20–25, 1947, this event was soon featured in the Museum by a representative display which included a 1:16-size scale model of the *Skystreak*, a drawing showing its functional parts, autographed photographs of the pilots, and views of the plane in flight. May 15, 1948, marked the thirtieth anniversary of the establishment of air mail on a permanet scheduled basis. The Air Museum had an outstanding display ready for the anniversary. Special exhibits were also prepared by the staff on the occasions of meetings of the Smithsonian's Board of Regents and the Air Museum's Advisory Board.

INFORMATIONAL SERVICES

The Air Museum conducts public relations and educational services through correspondence, by telephone, and by personal contact, a function that requires more curatorial attention than any other phase of the Air Museum's work. The Department of Education of the State of California adopted the Handbook of the National Aircraft Collection as a reference book for use in schools and ordered a number of copies. The American Helicopter Society was given drawings and texts to illustrate early rotor experiments. The Air Transport Association was furnished details on the first commercial air load, and the curator served as judge for the annual Science Fair held in Washington, May 3, 1948. The Boeing Aircraft Co. and the Curtiss-Wright Corp. required photographs of pioneer types of their own historic craft. Technical charts prepared by the Douglas Aircraft Co., Inc., were checked and corrected for historic accuracy.

The regrettable death of Orville Wright and the expected return to America of the famous aeroplane invented and flown by him and his brother brought a flood of requests for information on Wright aircraft and details of the brothers' lives.

Acknowledgments.—Many sources were consulted by the staff in order to accomplish their duties. The curator wishes to acknowledge the valued help of Dr. W. R. B. Acker of the Freer Gallery in translating Japanese inscriptions on ex-enemy equipment and Dr. Waldo L. Schmitt of the National Museum in making German translations; the aid by Charles Burgess of the Department of the Navy in reviewing the development of lighter-than-air craft; the constant assistance of Alfred Verville, also of the Department of the Navy, in locating and evaluating naval objects of museum interest; and the supplying, by the Department of the Air Force, through Lt. Robert Strobell, of Wright Field, of extensive data on ex-enemy aircraft. The Naval Air Reserve Training Unit, Anacostia NAS, provided expert technical help in conditioning and mounting several aircraft engines, and the engineering branch of the Bolling Field Air Force Base dismantled, moved, and assembled the Curtiss Racer R3C–2 for reexhibition in the Museum's aeronautical hall.

Lectures.—The curator gave the following lectures:

October 22, Optimists' Club of Arlington, Va.: National Air Museum's progress and plans.

January 21, a group of grade-school teachers at the Air Museum: Significance of the collections to school groups.

February 18, a group of 22 Turkish aviators: Tour of the collections.

March 20, a broadcast over station WGAY: The Air Museum's place in aeronautical education.

March 24, the Civil Aeronautics Club: The history of aeronautics.

March 31, the Civil Aeronautics Club: Tour of the collections.

May 21, Women Flyers' Club of Berkeley, Calif.: The National Air Museum's program.

May 30, Oakland Airport, Calif.: Plans for the National Air Museum.

June 6, Los Gatos, Calif., at the home of Robert Fowler (first to fly across the United States, eastward, 1911): Representations of "Early Birds" in the national collections.

June 11, Aviation Committee of the Bay Area, San Francisco: Representations of California airmen in the National Air Museum.

The associate curator gave one broadcast, as follows:

June 8, a broadcast over station WOL: The famous B–29 bomber *Enola Gay.*

SURVEY

In accord with the Advisory Board's motion, which inaugurated an extensive survey to locate desirable aeronautic materials, much curatorial time was devoted to: first, research to decide what items should be added to the collection; second, extensive correspondence to investigate availability, condition, and arrange procurement; third, meetings at the Air Museum with prospective donors; and fourth, visits to locate, examine, and receive material. The results of successful surveys are shown in the list of accessions.

Very helpful information on the condition of foreign aeronautical collections, and a number of leads for procurement of objects, resulted from a trip abroad by Mr. Loening, Board member, during August and September. The thorough manner in which he inspected museums, and the report, photographs, and catalogs which he brought back enabled the staff to gain a first-hand impression of the extent of air exhibits in England, France, and, to a certain extent, in Germany.

ACCESSIONS

The following listing of 45 accessions and 330 objects constitutes the largest lot of aeronautical acquisitions recorded in any year of the Smithsonian's history.

NATIONAL AIR MUSEUM ACCESSIONS DURING THE FISCAL YEAR ENDED JUNE 30, 1948

(Except where otherwise indicated, these have been entered as gifts or transfers)

AEROJET ENGINEERING CORP., Azusa, Calif.: (Through D. A. Kimball) 2 JATO rocket motors (178901).

AIR TRANSPORT ASSOCIATION OF AMERICA, Washington, D. C.: (Through Admiral Emory S. Land) 5 bound manuals relative to scheduled United States air lines' work in World War II (179056).

AVERY, JOHN B. (See under Consolidated Vultee Aircraft Corp.)

BAUSCH & LOMB CO., Rochester, N. Y.: (Through K. E. Reynolds) A current form of bubble sextant and accessories for celestial navigation (178841).

BELLINGER, Vice Admiral P. N. L., Washington, D. C.: A United States flag and a naval pennant flown on a Curtiss C–3 United States Navy flying boat during extended air scouting operations at Veracruz, Mexico, 1914 (179055).

BELT, Ambassador GUILLERMO. (See under Cuba, Republic of.)

BENDIX AVIATION CORP., South Bend, Ind.: (Through Cameron, Kerkam, and Sutton) A sectionalized Stromberg "injection carburetor" developed by the donors just before World War II and used on the majority of American military planes (179058).

BROOKS, EDITH, Washington, D. C.: Group of mementos from Air Meet at Nice, France, April 1910 (179060).

BROWN, Lt. K. S., Biloxi, Miss.: 50 specimens of German and Japanese aircraft instruments of World War II (179701), 5 items on loan.

CAMERON, KERKAM, AND SUTTON. (See under Bendix Aviation Corp.)

CARROLL SCHOOL OF AVIATION, Latrobe, Pa.: An Ackerman landing wheel, 1918 (176869).

CLINE, AL. (See under Northrop Aircraft, Inc.)

CONSOLIDATED VULTEE AIRCRAFT CORP., San Diego, Calif.: (Through John B. Avery) 3 models, 1:48 size, of World War II Consolidated-Vultee designed aircraft: PBY–5 Catalina Flying Boat, PB2Y–3 Coronado Flying Boat, and B–24 Liberator Bomber (178899).

CRUVER MANUFACTURING CO., Chicago, Ill.: (Through C. L. Cruver, Jr.) A set of 82 plastic scale model airplanes manufactured by the donor for the United States Navy and Army Air Corps during World War II (178941).

CUBA, REPUBLIC OF: (Through Guillermo Belt, Ambassador, Washington, D. C.) A diploma and medal in commemoration of the Pan American group flight of 1937, "pro Faro-Colon," granted by the Cuban Government (178900).

DATER, HENRY M. (See under National Military Establishment, *Department of the Navy.*)

DE HAVILLAND AIRCRAFT CO., LTD., Hatfield, Herfordshire, England: (Through Martin Sharp) A 1:16-size model of the De Havilland *Comet*, winner of the MacRobertson London to Melbourne Race, 1934 (179057).

DE YOUNG, M. H., MEMORIAL MUSEUM, San Francisco, Calif.: (Through Dr. Walter Heil) Nose fragment from the 1910 Antoinette airplane which was flown by Hubert Latham and made a number of West Coast flights (178955, loan).

DOUGLAS AIRCRAFT CO., INC., Santa Monica, Calif.: (Through G. B. Gelly) 2 scale model airplanes, 1:16 size, of Douglas types: the AD–1, carrier-based attack plane, and the D–558, *Skystreak* jet airplane which established the recent world's speed record (179700). Five charts illustrating characteristics of the earth's atmosphere and graphic presentations of transportation speeds (177266).

Fife, Capt. William P., Johnson City, Tenn.: A Japanese parachute, World War II, picked up by the donor in the Philippines at Clark Field, 1945 (178940).

Ford, Harry H., Bridgeport, Conn.: A Roberts engine, an El Arco radiator and a wooden propeller used on donor's Curtiss type "hydroaeroplane," 1912–13, and a photograph which shows the plane with donor at controls, taking off from Bridgeport Harbor, Conn., July 4, 1912 (179698).

Ford, Lyman. (See under Pioneer Parachute Co., Inc.)

Garber, Paul Edward, Washington, D. C.: An original Currier & Ives print illustrating the use of Thaddeus Lowe's Civil War Balloon at the Battle of Fair Oaks, Va., May 31, 1862 (176970).

Gardner, George. (See under Pan American World Airways System.)

Gelly, G. B. (See under Douglas Aircraft Co., Inc.)

Goodrich Co., B. F., Akron, Ohio: (Through H. W. Maxson) Stratosphere pressureized suit, designed and constructed by the donor organization for United States Air Forces (179106).

Heil, Dr. Walter. (See under M. H. DeYoung Memorial Museum.)

Hicks, Sgt. William T., Washington, D. C.: Winter flying suit used by Japanese aviators in World War II (178840); a Japanese aerial bomb of the small antipersonnel type (179061).

Hovey, Brig. Gen. B. M. (See under National Military Establishment, *Department of the Air Force.*)

Jacoel Cable Splicing Equipment Co., Philadelphia, Pa.: (Through J. Reaney) A Jacoel machine and kit used for splicing aircraft cables (175189).

Keip, F. B., Santa Clara, Calif.: A group of 26 photographs illustrating the accomplishments of Prof. John J. Montgomery of Santa Clara University in his glider flights, 1905–11 (179258).

Kimball, D. A. (See under Aerojet Engineering Corp.)

Koppers Co., Inc., Baltimore, Md.: (Through John D. Waugh) 2 examples of Aeromatic propeller development in the past 10 years and a 3-bladed German VDM propeller (179611).

Kovnat, Bernard. (See under United Air lines.)

Land, Admiral Emory S. (See under Air Transport Association of America.)

Laskowitz, I. B., Brooklyn, N. Y.: A wind-tunnel test model of a rotary unit as applied to a direct-lift rotary winged aircraft; and reference material (178990).

Loendorf, Walter, Waukesha, Wis.: A pair of goggles worn by Rear Admiral Albert C. Read (then Lt. Cmdr.) when commanding the Navy's NC–4 flying boat which accomplished the first trans-Atlantic flight, 1919 (179609).

Maxson, H. W. (See under B. F. Goodrich Co.)

McRoberts, Sgt. Robert L., Washington, D. C.: 2 original photographs of Lilienthal gliders, 1896, obtained from Otto Lilienthal's son by the donor in Augsburg, Germany, 1945 (178938).

Muzzy, A. V., Tyler Tex.: Experimental ground-to-air human pick-up equipment invented by donor in 1937 (176281).

National Military Establishment:

Department of the Air Force, Washington, D. C.: (Through Brig. Gen. B. M. Hovey) 2 insignia painted on masonite plasques illustrating devices for identifying airplanes based at Bolling Field, D. C. (178716); (through Gen. Carl Spaatz) a German machine gun, World War I, recovered from one of the 54 planes shot down by the French ace, Georges Guynemer; originally presented in December 1946 to Gen. Carl Spaatz by Mr. Guynemer's sister Mme. de la Noue (178839, loan).

Department of the Navy, Bureau of Aeronautics, Washington, D. C.: (Through Capt. Leroy Simpler) Material illustrating the recent world speed record flight established by the U. S. Navy with the Douglas airplane *Skystreak* (179696); (through Rear Admiral A. M. Pride) Japanese Baka suicide rocket aircraft bomb of the type used against our naval forces in the later part of World War II (178989). From Naval Air Station, Patuxent River, Md.: (Through Capt. C. W. Seitz) A Kasel-22 14-cylinder twin-row air-cooled radial engine of the type used in the large Japanese Kawanishi 4-engine flying boat *Emily* (179610). From Office of the Chief of Naval Operations, Washington, D. C.: (Through Dr. Henry M. Dater) An original set of 82 pen-and-ink drawings made by artist Frank Tinsley for weekly syndication in newspaper feature sections, each depicting the exploits of a famous Marine air hero (179719).

Northrop Aircraft, Inc., Hawthorne, Calif.: (Through Al Cline) A 1:16-size scale model of the P–61C Black Widow night fighter, the XF–15 photo reconnaissance plane, and the N3PB twin-float patrol bomber (179059).

Northwest Airlines, Inc., St. Paul, Minn.: 1 set of double seats of the type used in their DC–4 airplanes (176933).

Pan American World Airways System, New York, N. Y.: (Through Juan T. Trippe) 5 sets of double aircraft seats and 1 set of Pan American's DC–3 transport panel-chairs (178715, 179702). (These and other seats accessioned were donated for comfort and convenience of Museum visitors.) (Through George Gardner) 2 cutaway display models: a 1:10-size model of a Boeing 307 Strato-Clipper and a 1:16-size model of a Boeing 314 Flying Clipper (179417).

Pioneer Parachute Co., Inc., Manchester, Conn.: (Through Lyman H. Ford) Original parachute pack and harness (with a replacement canopy) used in making the first jump with a nylon parachute, June 6, 1942, and 4 framed photographs of Adeline Grey who made the jump (179697).

Powell, Lester W. B., Washington, D. C.: A 2-piece flying suit, used by the German Luftwaffe, World War II; it is stuffed with asbestos as a protection against flames (179257).

Pride, Rear Adm. A. M. (See under National Military Establishment, *Department of the Navy.*)

Reaney, J. (See under Jacoel Cable Splicing Equipment Co.)

Reynolds, K. E. (See under Bausch & Lomb Co.)

Richardson, Brig. Gen. William L., Washington, D. C.: A German machine gun mount taken from a JU–88 aircraft shot down in World War II (179699). (The donor affirms that the destruction of this aircraft was the final ground-to-air victory of the war.)

Seitz, C. W. (See under National Military Establishment, *Department of the Navy.*)

Sharp, Martin. (See under DeHavilland Aircraft Co., Ltd.)

Simpler, Capt. Leroy. (See under National Military Establishment, *Department of the Navy.*)

Spaatz, Gen. Carl. (See under National Military Establishment, *Department of the Air Force.*)

Thomas A. Edison, Inc., West Orange, N. J.: (Through Arthur R. Tice) Group of 5 aircraft instruments (178939).

Tice, Arthur R. (See under Thomas A. Edison, Inc.)

Trippe, Juan T. (See under Pan American World Airways System.)

UNITED AIR LINES, Chicago, Ill.: A 72-inch-span scale model of the Douglas DC–6 transport, and photos illustrating the transcontinental record set by this plane carrying passengers and crew, March 29, 1947, together with the National Aeronautical Association's homologation of that flight (179416); (through Bernard Kovnat) 2 sets of double aircraft seats from a DC–4 Mainliner 230 (179602).

WAUGH, JOHN D. (See under Koppers Co.)

Respectfully submitted.

CARL W. MITMAN,
Assistant to the Secretary for the National Air Museum.

DR. A. WETMORE,
Secretary, Smithsonian Institution.

APPENDIX 10

REPORT ON THE CANAL ZONE BIOLOGICAL AREA

Sir: It gives me pleasure to present herewith the annual report of the Canal Zone Biological Area for the fiscal year ended June 30, 1948.

TWENTY-FIFTH ANNIVERSARY

On April 17, 1948, the island laboratory celebrated its twenty-fifth anniversary. A special commemorative 10-cent stamp was issued by the Canal Zone, consisting of an outline drawing of the island, and within this the gato-solo (coati-mundi), the most versatile, intelligent mammal of the island. First-day covers, containing the 1947 annual report, were sent to those who had been on the island during the past 25 years, and many very interesting replies were received.

SCIENTISTS AND THEIR STUDIES

Dr. T. C. Schneirla, curator of the department of animal behavior of the American Museum of Natural History, continued his studies on army-ant behavior, assisted by Dr. Ernst Enzmann, of the Harvard Biological Laboratories, and by R. Z. Brown, of Swarthmore College. They "investigated the behavioral and biological conditions of two army-ant species, *Eciton hamatum*, a typical column raider, and *E. burchelli*, a typical swarm raider. The studies were begun in early November 1947 and continued through March 1948, thus starting late in the rainy season and extending well into the latter part of the dry season."

The study was concerned particularly with the manner in which army-ant colonies adapt to dry-season conditions, and the manner in which these ants produce their fertile females (dichthadiigynes). The project was designed to complete a general investigation on army-ant behavior and biological conditions begun in 1932 on Barro Colorado Island.

As a result of the findings, it is now clear that but one sexual brood per colony appears annually in the army ants, and that the pre-conditions of this brood are peculiar to the dry season. With further information about the timing of the one sexual brood per year and the conditions of its production, the implications of the army-ant situation for problems of caste and sex determination now are clearer.

The single sexual brood of 2,000 to 3,000 males and a dozen or less queen-type individuals is somehow produced by a functional queen which otherwise delivers huge all-worker broods at regular intervals throughout the year.

Facts concerning queen production in *Eciton* were checked in the study of a number of colonies. It was found that the number of young queens matured was very small, as a rule less than a dozen. They are fully developed in advance of the males, usually about 3 days. This female precocity proves to be very important for the process of colony division. Since young queens are present as adults before the males begin to emerge from their cases, it is possible for subsectioning of the colony to occur on a chemical-attraction basis before emergence of males arouses the colony into a move from its statary bivouacking site. The old colony queen is apt to be present in one of the subsections which becomes a new colony, one of the young new queens in another; these move off divergently and thenceforth behave as new colonies. The other young queens, through an interesting behavior process in the worker, are "sealed off" and eventually abandoned.

Dr. R. A. Johnson, State Teachers College, Oneonta, N. Y., came to the island when Dr. Schneirla and his associates were studying their army ants; hence it was a splendid opportunity for him to study the birds that attend the swarm raids of these ants, their various types of adjustment to habitat, territorialism, and social stimulation. In addition to the ant birds proper (Formicariidae), birds of other groups were found associated with these ant swarms. These associations differ distinctively, although all are represented by species of the Formicariidae.

Mrs. Dorothy Hobson, vice president of the Indiana Audubon Society, spent 2 months studying primarily the birds of the island, their nesting habits, and general behavior. She added much valuable information which will appear soon in published form.

Miss Clara Alma Moore, of Indianapolis, Ind., acompanied Mrs. Hobson and devoted most of her time to painting the birds in their natural habitats, nestings, and also some of the more conspicuous flowers. In addition she also made studies of nesting habits of birds.

Fred E. Moorehouse and Don F. Loughnan, of the Forest Products Laboratory of the United States Department of Agriculture at Madison, Wis., made careful inspection of the various types of container-grade plywood which have been in test on the island for several years. This also included cleated-plywood boxes. The tests were made to determine the effectiveness of various glues, glue preservatives, and toxic water-repellent treatments on the maintenance of quality of container-grade plywood when exposed to tropical conditions. The information obtained provides data desired by the Air Forces, as well as adding much to the laboratory's knowledge of the effects of tropical exposure on these various types of plywoods. A comprehensive report on these results was prepared.

Dr. Edna Robbins, biology teacher at the Mary C. Wheeler School for Girls, Providence, R. I., spent a short time on the island to get acquainted with the tropical flora and certain of the invertebrates, and to add to her knowledge of environmental factors.

Dr. A. Brazier Howell, formerly of Johns Hopkins University, now retired, spent 10 days on the island in December, accompanied by Mrs. Howell, for the purpose of noting the changes that have taken place since he studied here 19 years ago. "A period of this duration can have practically no effect on a tropical rain forest undespoiled by man, and undoubtedly the habitat under which the fauna exists at this locality is now as nearly identical in comparison with two decades ago as it can be. But it is probable that the fauna is now in a more stable state than it was then. As time passes the absence of human interference, coupled with the segregation essential in an island habitat, results in an adjustment in the interrelationship of the elements of the fauna that is as near natural as can possibly be."

Dr. Marshall H. Stone, formerly of Harvard, and now with the Department of Mathematics of the University of Chicago, accompanied by Mrs. Stone, likewise spent a short time on the island, with broad interests in fauna and flora.

Dr. Nevin S. Scrimshaw, of the University of Rochester Medical School, returned to the island for a brief visit, to make a survey of the fresh-water fishes in connection with his previous studies there on this subject.

John Sellman, of the Sayville High School, New York, spent a short time on the island studying the animal life, in order to be able to give first-hand knowledge of the life in the American humid Tropics to his students. He has published several interesting articles on his observations.

H. C. Secrest, entomologist in the Division of Forest Insect Investigations of the Bureau of Entomology and Plant Quarantine, came in order to make examinations of the several thousand soil-poison tests and treated-wood series installed by Kowal, Dews, and Johnson, and reported upon in the 1947 report. The results of these experiments are most interesting, but no conclusions are being announced as yet.

Fred W. Gottschalk and R. B. Putnam, of the American Lumber & Treating Co., of Chicago, Ill., came in order to get first-hand information on the very large series of termite tests being conducted by the Bureau of Entomology and Plant Quarantine. These tests, begun nearly a quarter of a century ago, are, in fact, a history of wood preservation.

Dr. Eugene Eisenmann, lawyer of New York City and an ornithologist of note, again spent some time on the island studying the birds and, as in the past, added many new records. The island is greatly indebted to him not only for sound advice, but also for his repeated assistance in other ways.

W. Doyle Reed, who is in charge of the entomological work for the United States Army, visited the Isthmus in connection with arrangements for the extension of this work in the army units here. Many conferences were held with the resident manager, and a short stay was made on the island to get acquainted with the entomological studies being conducted there. He was accompanied by Maj. Osborn A. Kinzer, C. E., of Dallas, Tex.; Maj. J. Phoble, C. E., of the Caribbean Defense Command; Maj. Ralph W. Bunn, M. Sc., of the Surgeon General's Office; Walter V. Kell, O. C. E., of Washington; and Col. Karl R. Lundberg, M. C., of the Office of the Chief Health Officer of the Panama Canal.

Jerry H. Staedeli, stationed with the army at Corozal, mainly interested in reptiles, spent 2 weeks on the island observing and recording the fauna seen, covering more than 30 miles of trails, as well as about 20 miles in a cayuco around the island.

Per Host, from Norway, ornithologist and mammalogist, spent considerable time on the island, chiefly in photographic work. Never before has the island had a visitor with the equipment he had for both still and motion pictures. He made over 3,000 feet of what are probably the finest motion pictures ever taken of the animals of the island, and many hundred "stills" in black and white and in color. He duplicated successfully a number of the experiments recorded by Chapman with the versatile coati-mundi, and has a splendid series of motion pictures of these in color. He also has slow-motion pictures of animals climbing and leaping. Most of his spectacular photography was taken from the main laboratory site. In his own words: "I am extremely satisfied both with the opportunities for getting pictures that I enjoyed, and for the education and introduction to the Tropics made possible by this unique combination of easy access to observations of a virgin jungle with the facilities of the laboratory and library."

Dr. C. C. Soper, in charge of the Tropical Research Laboratory of Eastman Kodak Co., continued his studies throughout the year on the effects of tropical conditions. Valuable data have been obtained on the keeping quality of film, papers, chemicals, and photographic equipment in general. Data have also been obtained on the tropical deterioration of photographic negatives and prints, particularly the deterioration attributable to biological origin. The studies on the island are also adding rapidly to the problems of tropical lighting conditions, and the exposure of both black and white and color films, as well as to the related problem of film processing at high temperatures.

Many of the data have been utilized in the preparation of a manuscript on tropical photography, which when released will be of immediate help to photographers working in tropical and semitropical areas. This is a most valuable contribution and represents many years of careful, detailed study right in the Tropics, most of it on the island. The two basic sources of trouble are heat and humidity, especially the latter. In this work, Mr. Soper is assisted by Mr. Hermle.

James Zetek continued his studies on fruitflies, as well as the extensive termite tests in preparation for his forty-first progress report. This very large series of exposures, which in addition to termite tests, include rot, beetle, and other tests, is each year yielding more important data. In addition to this series, examinations were also made of the extensive soil-poison and treated-wood tests initiated and installed by Kowal-Dews-Johnson.

Smithsonian Institution. The following were visitors to the laboratory: Dr. Alexander Wetmore, Secretary, who had been in Herrera Province on ornithological reconnaissance, assisted by W. M. Perrygo, visited the island in February and in April largely on plans and discussions with the resident manager. John E. Graf, Assistant Secretary, spent some time on the island, likewise in discussions of plans, as well as to get acquainted with the island and the Tropics in general. This was his first visit to the Tropics, and it left him with lasting impressions and with the urge to return soon. Thomas F. Clark, administrative accountant, also spent some time on the island to become acquainted with the general set-up and to discuss property and fiscal matters with the resident manager. These three visitors and counselors were most welcome.

Dr. Matthew W. Stirling, Director of the Bureau of American Ethnology, with Mrs. Stirling, and Richard Stewart, staff photographer for the National Geographic Society, recently returned from archeological explorations in the region of Parita, were welcome visitors in April.

STUDIES ON DETERIORATION AND CORROSION

During World War II a great amount of work was done on the island with refernce to deterioration and corrosion, much of it related to war needs. As the program continued, it became more and more apparent that the island was especially well fitted for this sort of work, and that in addition, the isolation gave security. The studies included not only fabrics, foodstuffs, and corrosion of lenses, but also packing and packaging, the use of substitute materials, and similar problems. High temperatures and humidities, especially the latter, with the growth of fungus and other organisms, create serious problems. Elsewhere in this report reference is made to the large number of such studies undertaken by Eastman Kodak Co., as a result of which it is possible to avoid many of these difficulties. It is believed that this phase of practical studies should be expanded, and facilities will be granted to concerns and government units that have need for such information.

BUILDINGS

The main laboratory building, 32 by 55 feet, contains laboratories, a dining room, dormitory, and photographic darkroom. It is in excellent condition, showing neither termite damage nor rot. Three buildings—the Barbour guest house, the Chapman house, and the "Zetek" Z-M-A house—each provide adequate lodging for four persons, and the first two have ample laboratories. The kitchen building has on the second floor a dormitory for six persons. Other buildings are the masonite building used by the labor force; the caretaker's home; the library; Zetek's quarters, a concrete-block building used as office and living quarters for the resident manager; and the kodak test building, which is itself a termite test in addition to housing Eastman Kodak's exposure tests for corrosion and deterioration.

The remaining buildings are five small structures, each located at the end of one of the island trails. All are available for the use of scientists, each structure accommodating two persons. These buildings are also practical termite tests.

A paper entitled "Inspection of Test Buildings Treated for Termites on Barro Colorado Island, Canal Zone, Panama," by Thomas E. Snyder and James Zetek, was published in the March 1948 issue of Pests and Their Control, Kansas City. Those interested in the effectiveness of treated wood in termite control will find this report of value.

IMPROVEMENTS MADE

Both the coal-tar creosoted and cypress water tanks were in such bad condition that replacements were necessary, and a concrete tank of 4,000 gallons was built at a cost of about $400. This tank is for safe drinking water. Since plans had to be made for a much more adequate gravity-flow water supply, a site was selected for a new 14,000-gallon concrete water tank on the Snyder-Molino trail. The area has been cleared and leveled, and the necessary galvanized pipe procured. Work on the tank will be started when the rains subside.

The present dock, owing to the silting of the bay and the low level of Gatun Lake, had to be enlarged. The new center dock, which has concrete piers, should be adequate for many years to come. The old shingle roof of the Fuertes House, at end of the Pearson trail, was replaced with one of galvanized corrugated iron.

TABLE 1.—*Annual rainfall, Barro Colorado Island, Canal Zone*

Year:	*Total inches*	*Station average*	Year:	*Total inches*	*Station average*
1925	104. 37	------	1937	124. 13	110. 12
1926	118. 22	113. 56	1938	117. 09	110. 62
1927	116. 36	114. 68	1939	115. 47	110. 94
1928	101. 52	111. 35	1940	86. 51	109. 43
1929	87. 84	106. 56	1941	91. 82	108. 41
1930	76. 57	101. 51	1942	111. 10	108. 55
1931	123. 30	104. 69	1943	120. 29	109. 20
1932	113. 52	105. 76	1944	111. 96	109. 30
1933	101. 73	105. 32	1945	120. 42	109. 84
1934	122. 42	107. 04	1946	87. 38	108. 81
1935	143. 42	110. 35	1947	77. 92	107. 49
1936	93. 88	108. 98			

TABLE 2.—*Comparison of 1946 and 1947 rainfall, Barro Colorado Island, Canal Zone (inches)*

Month	Total		Station average	Years of record	Excess or deficiency	Accumulated excess or deficiency
	1946	1947				
January	0. 45	0. 40	1. 84	22	−1. 44	−1. 44
February	0. 32	2. 14	1. 27	22	+0. 87	−0. 57
March	1. 71	0. 54	1. 42	22	−0. 88	−1. 45
April	1. 41	3. 09	2. 81	23	+0. 28	−1. 17
May	8. 05	4. 82	10. 85	23	−6. 03	−7. 20
June	7. 94	12. 06	11. 31	23	+0. 75	−6. 45
July	12. 58	7. 53	11. 63	23	−4. 10	−10. 55
August	10. 50	11. 76	12. 53	23	−0. 77	−11. 32
September	10. 67	9. 53	10. 43	23	−0. 90	−12. 22
October	9. 00	13. 17	13. 17	23	----------	−12. 22
November	14. 98	7. 25	18. 78	23	−11. 53	−23. 75
December	9. 77	5. 63	11. 45	23	−5. 82	−29. 57
Year	87. 38	77. 92	107. 49	----------	----------	−29. 57
Dry	3. 89	6. 17	7. 34	----------	----------	−1. 17
Wet	83. 49	71. 75	100. 15	----------	----------	−28. 40

URGENT NEEDS

First on the list of urgent needs is a more adequate supply of electricity on a 24-hour daily basis. The present small generators are inadequate, and the equipment is in need of repair. An addition is needed for the kitchen to make room for electric refrigerators. To reduce fire risk, the present kitchen and the proposed addition should be remade of concrete blocks and tile. Also on the urgent list is a larger building of concrete blocks to take care of the expanding library and herbarium, as well as the species index and scientific equipment, all of which must be in a fireproof building with provision for heaters to reduce the humidity.

A new concrete water tank of 14,000-gallons capacity mentioned above will be built this coming fiscal year. It will be located on the Snyder-Molino trail, high enough so that there will be good gravity flow with a strong enough head to it. The tank will be so built that the height can be increased later on to provide for more storage.

The Chapman and the Barbour houses should be rebuilt with concrete blocks and tile, and increased in size.

FISCAL REPORT

During the fiscal year 1948, $12,934.25 in trust funds was available. Of this amount $11,478.64 was spent, leaving on hand only $1,455.61 with which to face the new fiscal year. In addition to this amount, $1,458.20 is still on deposit, representing local collections, and there will be added a few table subscriptions, but, even with these, the coming year will be a rather difficult one financially.

During this fiscal year only $1,907.75 was collected as fees from scientists, as compared with $4,403.96 last year. This decline is largely due to the high cost of ocean or air travel, and efforts should be made to obtain concessions which will reduce materially this heavy expense. The laboratory, despite the higher costs of food and other items, has not increased its per diem charge to scientists.

The institutions listed below continued to aid materially in the support of the laboratory through payment of table subscriptions. These institutions, because of their support, are given a 25 percent reduction in the per diem for such scientists as come to the laboratory.

Smithsonian Institution	$300
American Museum of Natural History	300
Eastman Kodak Company	1,000
New York Zoological Society	300
University of Chicago	300

It is most gratifying to record that the Smithsonian Institution increased its subscription by an additional $500.00 The Forest Products Laboratory of the United States Department of Agriculture contributed $550.00 as service fees for facilities furnished by the laboratory in connection with the termite and other tests on the island.

It is likewise most gratifying to record donations from Dr. Eugene Eisenmann of New York City, an ornithologist of note, from Mrs. G. S. Patton, Jr., and from Mrs. Laurie Randall.

The sum of $5,000 was made available by the Smithsonian Institution from appropriated funds, and of this amount $4,999.21 was used for permanent improvements.

Respectfully submitted.

JAMES ZETEK, *Resident Manager.*

DR. ALEXANDER WETMORE,
Secretary, Smithsonian Institution.

APPENDIX 11

REPORT ON THE LIBRARY

SIR: I have the honor to submit the following report on the activities of the Smithsonian library for the fiscal year ended June 30, 1948:

The library received 53,129 publications during the year, 9,250 of which were transmitted by the International Exchange Service. They covered broadly the fields of astrophysics, botany, zoology, geology, anthropology, engineering, the fine and useful arts, history, and many related subjects. They came from all over the world, by purchase, by gift, and in exchange, and were written in many different languages.

Friends of the Institution continued to make generous gifts of books, pamphlets, and periodicals. Especially noteworthy among the 9,798 of the publications so received was the library of the late Charles B. Chaney, of Laurel, Md., a very fine collection of 1,510 books and periodicals on the history of railroads, presented for the special use of the division of engineering. The American Association for the Advancement of Science and the American Association of Museums continued to make large donations of current books and periodicals. The library is, as always, greatly indebted to these friends everywhere throughout the world for their contributions.

Purchased publications included 1,485 volumes and pamphlets, and 271 periodical subscriptions.

The library is primarily a working reference collection, not a museum of rare or fine books, but the interests and responsibilities of the Smithsonian Institution touch so wide and timeless a range of subjects that many old as well as new books are in daily use. A few of the out-of-print works purchased to fill lacunae in various subject fields were the following: A Natural History of Singing Birds, by Eleazar Albin, Edinburgh, 1776; History of Early Steamboat Navigation on the Missouri River, by H. M. Chittenden, New York, 1902, 2 volumes; Art Sales from early in the Eighteenth Century to early in the Twentieth Century, by Algernon Graves, London, 1918–21, 3 volumes; Atlas der Baumgarten von Java, by S. H. Koorders, Leiden, 1913–18, 4 volumes; Voyages made in the Years 1788 and 1789, from China to the N. W. Coast of America, by John Meares, London, 1791, 2 volumes; Conchology, or Natural History of Shells, by E. Mendes da Costa, London, 1770–72, numbers 1–6; Monograph of the Snakes in Japan, by Moichiro Maki, with 85 colored plates and 158 text figures, Tokyo, 1931, 2 volumes; The Printer's Grammar, by Charles Stower, London, 1808; Ceramic Literature: an Analytical Index to the Works Published in All Languages on the History and Technology of the Ceramic Art, by L. M. E. Solon, London, 1910; The Voyage of the *Challenger*, a Personal Narrative of the Historic Circumnavigation of the Globe in the Years 1872–1876, by Herbert Swire, London, 1938, 2 volumes; Der Französische Kupferstich der Renaissance, by Erika Tietze-Conrat, Munich, 1925; Zeitschrift für die Entomologie, edited by E. Germar, Leipzig, 1839–44, 5 volumes.

Serial publications, which include not only regularly issued periodicals, but the reports, bulletins, proceedings, monographs, and other publications of learned societies and research institutions, of museums and art galleries, of universities, libraries, and laboratories everywhere, form the largest and probably the most indispensable part of the library's holdings. Except for the periodical parts represented by the 271 purchased subscriptions and a few received as gifts, all those added to the library during the year came in exchange for the Institution's own publications. Currently entered were 15,256 periodical parts, and many annual volumes and irregularly issued serials were cataloged. Many gaps in serial sets, some of them of long standing, were filled by the 6,782 volumes and parts received in response to 719 special requests. New exchanges arranged were 314.

To the great Smithsonian Deposit in the Library of Congress, first established in 1866, were sent 5,809 volumes and parts, many of them in continuation of files of the scientific and technical proceedings of learned societies. Also sent to the Library of Congress were 12,342 miscellaneous publications, including 1,023 dissertations on a great variety of subjects from 14 foreign and 3 American universities, and a large number of other books and periodicals on subjects not pertinent to the work of the Institution.

Most of the 2,339 publications transferred to government libraries other than the Library of Congress had been received during the year. Among them were 508 medical dissertations transferred to the Army Medical Library.

The cataloging of 6,148 volumes and pamphlets was completed during the year, and 35,357 cards were added to catalogs and shelflists. Except for a small number of older publications in urgent need of cataloging attention, the huge "backlog" of cataloging remained virtually untouched and must continue to remain so until an adequate staff for doing the work can be provided.

Funds were not sufficient to permit all the volumes of periodicals completed during the year to be sent to the bindery, but the diligent studies made by the Government Printing Office to reduce binding costs permitted 1,052 volumes or 436 more than last year to be bound for approximately the same sum customarily allotted for binding. Because of illness on the staff the volumes repaired in the Museum, 826, were somewhat fewer than last year.

Although there was no member of the staff who could be detailed to work regularly with the library's large collection of duplicates, time was found to select 36,701 pieces for use in aid of destroyed libraries overseas.

The 10,151 publications borrowed for use outside the library can only hint at the actual use made of the library, which is the true test of its value to the Institution. Certainly many times that number of books and periodicals were consulted in the main reading rooms, the stacks, and the divisional libraries kept immediately adjacent to the offices and laboratories of the scientific staff in all the buildings of the Institution. The library staff itself answered more than 15,000 reference questions, most of which required the consultation of more than one, and some of them of many different publications.

The housing of the library continues to be its most serious unsolved problem. In an institution charged with responsibility for administering research in so many different highly specialized and technical fields, a good many relatively small decentralized collections of books and periodicals on special subjects are both necessary and desirable, but such decentralization should always be made in the direct interest of furthering the work of a given bureau or division, never merely as a housing convenience, or at the expense of lowering the working reference efficiency of the central library collections and consequently at the expense of the work of the institution as a whole. Our shelves are now so badly overcrowded everywhere that it has become impossible to avoid committing almost every sin in the library calendar, both of giving good care to the books and of giving good library service.

SUMMARIZED STATISTICS

Accessions

	Volumes	Total recorded volumes June 30, 1948
Astrophysical Observatory (including Radiation and Organisms)	344	12, 587
Bureau of American Ethnology	145	34, 607
National Collection of Fine Arts	470	11, 444
National Museum	2, 724	241, 891
National Zoological Park	14	4, 180
Smithsonian Deposit at the Library of Congress	1, 800	578, 673
Smithsonian Office	422	32, 607
Total	5, 919	915, 987

Neither incomplete volumes of periodicals nor separates and reprints from periodicals are included in these figures.

Exchanges

New exchanges arranged	314
93 of these were assigned to the Smithsonian Deposit in the Library of Congress.	
Specially requested publications received	6,782
1,022 of these were obtained to fill gaps in the Smithsonian Deposit sets.	

Cataloging

Volumes and pamphlets cataloged	6,148
Cards added to catalogs and shelflists	35,357

Periodicals

Periodical parts entered	15,256
Of these 4,813 were sent to the Smithsonian Deposit at the Library of Congress.	

Circulation

Loans of books and periodicals	10,151
This figure does not include the intramural circulation of books and periodicals filed in 31 sectional libraries, of which no count is kept.	

Binding

Volumes sent to the bindery	1,052
Volumes repaired in the Museum	826

Respectfully submitted.

Leila F. Clark, *Librarian.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

APPENDIX 12

REPORT ON PUBLICATIONS

Sir: I have the honor to submit the following report on the publications of the Smithsonian Institution and its branches during the year ended June 30, 1948.

The Institution published during the year 22 papers, 1 title page and table of contents, and 1 reprint of a paper in the Smithsonian Miscellaneous Collections, 1 Annual Report of the Board of Regents and pamphlet copies of 17 articles in the Report appendix, 1 Annual Report of the Secretary, and 2 special publications.

The United States National Museum issued 1 Annual Report, 17 Proceedings papers, 4 Bulletins, and 2 separate papers in the Bulletin series, Contributions from the United States National Herbarium.

The Bureau of American Ethnology issued 1 Annual Report and 2 volumes of Bulletin 143.

The Institute of Social Anthropology issued 4 publications.

Of the publications there were distributed 165,740 copies, which included 15 volumes and separates of Smithsonian Contributions to Knowledge, 44,338 volumes and separates of Smithsonian Miscellaneous Collections, 25,242 volumes and separates of Smithsonian Annual Reports, 6,922 War Background Studies, 12,215 Smithsonian special publications, 65 reports on the Harriman Alaska Expedition, 50,970 volumes and separates of National Museum publications, 14,203 publications of the Bureau of American Ethnology, 10,834 publications of the Institute of Social Anthropology, 17 catalogs of the National Collection of Fine Arts, 66 volumes and pamphlets of the Freer Gallery of Art, 15 Annals of the Astrophysical Observatory, 760 reports of the American Historical Association, and 78 miscellaneous publications not printed by the Smithsonian Institution (mostly Survival Manuals).

SMITHSONIAN MISCELLANEOUS COLLECTIONS

In this series there were issued title page and table of contents of volume 91, 14 papers in volume 107, whole volumes 108 and 109, 6 papers in volume 110, and a reprint of 1 paper in volume 74, as follows:

VOLUME 91

Title page and table of contents. (Publ. 3903.) Aug. 29, 1947.

VOLUME 107

No. 7. The insect cranium and the "epicranial suture," by R. E. Snodgrass. 52 pp., 15 figs. (Publ. 3896.) July 30, 1947.

No. 8. Some implications of the ceramic complex of La Venta, by Philip Drucker. 9 pp., 6 pls. (Publ. 3897.) July 30, 1947.

No. 9. Precipitation affected by solar variation, by C. G. Abbot. 4 pp., 2 figs. (Publ. 3901.) Aug. 11, 1947.

No. 10. A revised analysis of solar-constant values, by C. G. Abbot. 9 pp., 2 figs. (Publ. 3902.) Aug. 30, 1947.

No. 11. Notes on the neotropical Dictyopharidae and synonymy in two other groups, by R. G. Fennah. 13 pp., 2 pls. (Publ. 3904.) Nov. 24, 1947.

No. 12. The Wineland voyages, by John R. Swanton. 81 pp. (Publ. 3906.) Dec. 15, 1947.

No. 13. The Edmonton, Kentucky, meteorite, by E. P. Henderson and S. H. Perry. 4 pp., 4 pls. (Publ. 3907.) Oct. 31, 1947.

No. 14. A review of the races of the spotted babbling thrush, *Pellorneum ruficeps* Swainson. 20 pp. (Publ. 3908.) Oct. 20, 1947.

No. 15. Report on collections of birds made by United States Naval Medical Research Unit No. 2 in the Pacific war area, by Lt. Rollin H. Baker. 74 pp., 6 pls., 9 figs. (Publ. 3909.) Mar. 22, 1948.

No. 16. Charles T. Simpson's types in the molluscan genus *Liguus*, by Frederick M. Bayer. 8 pp., 1 color pl. (Publ. 3910.) Apr. 3, 1948.

No. 17. Inhibition of plant growth by emanations from oils, varnishes, and woods, by Robert L. Weintraub and Leonard Price. 13 pp., 8 pls. (Publ. 3912.) Mar. 10, 1948.

No. 18. A review of the American menhaden, genus *Brevoortia*, with a description of a new species, by Samuel F. Hildebrand. 39 pp., 9 figs. (Publ. 3913.) Mar. 22, 1948.

No. 19. Energy spectra of some of the brighter stars, by C. G. Abbot and L. B. Aldrich. 9 pp., 1 pl., 3 figs. (Publ. 3914.) Feb. 27, 1948.

No. 20. Influence of light on chemical inhibition of lettuce seed germination, by Robert L. Weintraub. 8 pp. (Publ. 3915.) May 27, 1948.

VOLUME 108

Compendio y descripcion de las Indias Occidentales, por Antonio Vázquez de Espinosa, transcribed by Charles Upson Clark. 801 pp. (Publ. 3898.) [May 10], 1948.

VOLUME 109

Smithsonian elliptic functions tables, by G. W. and R. M. Spenceley. iv+366 pp. (Publ. 3863.) Nov. 1, 1947.

VOLUME 110

No. 1. Solar variation attending West Indian hurricanes, by C. G. Abbot. 7 pp., 1 fig. (Publ. 3916.) Apr. 20, 1948.

No. 2. Influence of illumination on reducing sugar content of etiolated barley and oat seedlings, by Robert L. Weintraub and Leonard Price. 3 pp. (Publ. 3917.) Mar. 10, 1948.

No. 3. The amphipods of the Smithsonian-Roebling Expedition to Cuba in 1937, by Clarence R. Shoemaker. 15 pp., 3 figs. (Publ. 3918.) Apr. 20, 1948.

No. 4. 1947–1948 report on the 27.0074-day cycle in Washington precipitation, by C. G. Abbot. 2 pp. (Publ. 3919.) Mar. 10, 1948.

No. 5. Smithsonian pyrheliometry and the standard scale of solar radiation, by L. B. Aldrich and C. G. Abbot. 4 pp. (Publ. 3920.) Apr. 15, 1948.

No. 6. Magnetic storms, solar radiation, and Washington temperature departures, by C. G. Abbot. 12 pp., 2 pls., 4 figs. (Publ. 3940.) June 25, 1948.

REPRINT: VOLUME 74

No. 1. Smithsonian mathematical formulae and tables of elliptic functions, by Edwin P. Adams and Col. R. L. Hippisley. Second reprint. 314 pp. (Publ. 2672.) Jan. 15, 1948.

SMITHSONIAN ANNUAL REPORT

Report for 1946.—The complete volume of the Annual Report of the Board of Regents for 1946 was received from the Public Printer October 13, 1947:

Annual Report of the Board of Regents of the Smithsonian Institution showing the operations, expenditures, and condition of the Institution for the year ended June 30, 1946. ix+440 pp., 53 pls., 24 figs. (Publ. 3871.)

The general appendix contained the following papers (Publs. 3872–3888):

On the astronomical dating of the earth's crust, by Harlow Shapley.
Atomic power in the laboratory and in the stars, by Robert S. Richardson.
Atomic energy as a human asset, by Arthur H. Compton.
The scientific importance of X-rays, by L. Henry Garland.
Visible patterns of sound, by Ralph K. Potter.
Fluorine in United States water supplies—Pilot project for the Atlas of Diseases, by Anastasia Van Burkalow.
The birth of Parícutin, by Jenaro Gonzalez R. and William F. Foshag.
The natural history of whalebone whales, by N. A. Mackintosh.
Life history of the quetzal, by Alexander F. Skutch.
The sun and the harvest of the sea, by Waldo L. Schmitt.
Anthropology and the melting pot, by T. D. Stewart.
Archeology of the Philippine Islands, by Olov R. T. Janse.
Palestinian pottery in Bible times by J. L. Kelso and J. Palin Thorley.
The march of medicine, by M. M. Wintrobe.
Technology and medicine, by Kurt S. Lion.
National responsibility for research, by J. E. Graf.
Toward a new generation of scientists, by L. A. Hawkins.

Report for 1947.—The Report of the Secretary, which included the financial report of the executive committee of the Board of Regents, and which will form part of the Annual Report of the Board of Regents to Congress, was issued January 9, 1948:

Report of the Secretary of the Smithsonian Institution and financial report of the executive committee of the Board of Regents for the year ended June 30, 1947. ix+169 pp., 4 pls. (Publ. 3911.) 1948.

The Report volume for 1947, containing the general appendix, was in press at the close of the year.

SPECIAL PUBLICATIONS

The National Aircraft Collection, by Paul Edward Garber. Seventh edition. 43 pp., illus. (Publ. 3900.) [July 24], 1947.

Brief Guide to the Smithsonian Institution. Seventh edition. 80 pp., illus. [Apr. 9], 1948.

PUBLICATIONS OF THE UNITED STATES NATIONAL MUSEUM

The editorial work of the National Museum has continued during the year under the immediate direction of the editor, Paul H. Oehser. There were issued 1 Annual Report, 17 Proceedings papers, 4 Bulletins, and 2 separate papers in the Bulletin series, Contributions from the United States National Herbarium.

REPORT

Report on the progress and condition of the United States National Museum for the fiscal year ended June 30, 1947. iii+108 pp. Jan. 17, 1948.

PROCEEDINGS: VOLUME 96

No. 3206. A generic revision of the ichneumon-flies of the tribe Ophionini, by R. A. Cushman. Pp. 417–482, pls. 49–56. July 17, 1947.

No. 3207. Review of the weevils of the tribe Ophryastini of America north of Mexico, by Alonzo G. Davis. Pp. 483–551, figs. 49–77. July 8, 1947.

Title page, table of contents, list of illustrations, and index. Pp. i–vii, 553–572. Mar. 18, 1948.

VOLUME 97

No. 3208. Mammals of northern Colombia. Preliminary report No. 1: Squirrels (Sciuridae), by Philip Hershkovitz. Pp. 1–46, fig. 1. Aug. 25, 1947.

No. 3210. Studies on the firefly. IV: Ten new lampyrids from Jamaica, by John B. Buck. Pp. 59–79, pls. 1–3. Aug. 14, 1947.

No. 3211. A new genus and species of deep-sea fish of the family Myctophidae from the Philippine Islands, by Robert R. Miller. Pp. 81–90, fig. 2. July 18, 1947.

No. 3212. A review of the larvaevorid flies of the tribe Leskiini with the setulose first vein (R_1), by Maurice T. James. Pp. 91–115, fig. 3. Aug. 29, 1947.

No. 3213. The staphylinid beetles of the Cayman Islands, by Richard E. Blackwelder. Pp. 117–123. Oct. 31, 1947.

No. 3214. Mammals of northern Colombia. Preliminary report No. 2: Spiny rats (Echimyidae), with supplemental notes on related forms, by Philip Hershkovitz. Pp. 125–140. Jan. 6, 1948.

No. 3215. A synopsis of the larvaevorid flies of the genus *Eudejeania*, by Curtis W. Sabrosky. Pp. 141–156. Nov. 20, 1947.

No. 3216. The Pycnogonida of the western North Atlantic and the Caribbean, by Joel W. Hedgpeth. Pp. 157–342, figs. 4–53, 3 charts. Mar. 8, 1948.

No. 3217. Notes on some assassin bugs of the genus *Zelurus* from the collections of the United States National Museum, by Herman Lent and Petr Wygodzinsky. Pp. 343–349, pls. 4–7. Dec. 4, 1947.

No. 3218. New genera and species of echiuroid and sipunculoid worms, by Walter Kenrick Fisher. Pp. 351–372, pls. 8–15, fig. 54. Dec. 19, 1947.

No. 3219. Birds collected by the National Geographic Society's expeditions to northern Brazil and southern Venezuela, by Herbert Friedmann. Pp. 373–570, pls. 16–27. Apr. 9, 1948.

VOLUME 98

No. 3220. A revision of six subfamilies of atherine fishes, with descriptions of new genera and species, by Leonard P. Schultz. Pp. 1–48, pls. 1 and 2, figs. 1–9. Mar. 24, 1948.

No. 3221. Mammals of northern Colombia. Preliminary report No. 3: Water rats (genus *Nectomys*), with supplemental notes on related forms, by Philip Hershkovitz. Pp. 49–56. June 30, 1948.

No. 3223. Status of the pyraustid moths of the genus *Leucinodes* in the New World, with descriptions of new genera and species, by Hahn W. Capps. Pp. 69–83, pls. 5–10. June 24, 1948.

BULLETINS

No. 82. A monograph of the existing crinoids. Vol. 1, The Comatulids. Pt. 4b—Superfamily Mariametrida (concluded—the family Colobometridae) and superfamily Tropiometrida (except the families Thalassometridae and Charitometridae), by Austin Hobart Clark. Pp. i–vii, 1–473, 43 pls. Oct. 9, 1947.

No. 185, part 5. Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America, by Richard E. Blackwelder. Pp. i–iv, 765–925. Oct. 31, 1947.

No. 193. A list and index of the publications of the United States National Museum (1875–1946). Pp. i–iv, 1–306. Dec. 19, 1947.

No. 194. An annotated checklist and key to the Amphibia of Mexico, by Hobart M. Smith and Edward H. Taylor. Pp. i–iv, 1–118. June 17, 1948.

CONTRIBUTIONS FROM THE UNITED STATES NATIONAL HERBARIUM

VOLUME 29

Part 4. The awnless annual species of *Muhlenbergia*, by Jason R. Swallen. Pp. i–ii, 203–208. Nov. 24, 1947.

VOLUME 30

Part 2. Observations on the grass flora of certain Pacific Islands, by L. T. Burcham. Pp. i–vii, 405–447, 4 figs., 7 pls. Mar. 10, 1948.

PUBLICATIONS OF THE BUREAU OF AMERICAN ETHNOLOGY

The editorial work of the Bureau continued under the immediate direction of the editor, M. Helen Palmer. During the year the following publications were issued:

REPORT

Sixty-fourth Annual Report of the Bureau of American Ethnology, 1946–1947. 30 pp.

BULLETINS

143. Handbook of South American Indians. Julian H. Steward, editor:
  Vol. 3, The Tropical Forest tribes. 986 pp., 126 pls., 134 figs., 8 maps. June 3, 1948.
  Vol. 4, The Circum-Caribbean tribes. 609 pp., 98 pls., 79 figs., 11 maps. June 30, 1948.

PUBLICATIONS OF THE INSTITUTE OF SOCIAL ANTHROPOLOGY

No. 4. Cultural and historical geography of Southwest Guatemala, by Felix Webster McBryde. 184 pp., 48 pls., 2 figs., 25 maps.

No. 5. Highland communities of Central Peru: A regional survey, by Harry Tschopik, Jr. 56 pp., 16 pls., 2 maps.

No. 6. Empire's children: The people of Tzintzuntzan, by George M. Foster. 297 pp., 16 pls., 36 figs., 2 maps.

No. 7. Cultural geography of the modern Tarascan area, by Robert C. West. 77 pp., 14 pls., 6 figs., 21 maps.

REPORT OF THE AMERICAN HISTORICAL ASSOCIATION

The annual reports of the American Historical Association are transmitted by the Association to the Secretary of the Smithsonian Institution and are communicated by him to Congress, as provided by the act of incorporation of the Association. The following report volume was issued this year:

Annual Report of the American Historical Association for the year 1946. Volume 1, Proceedings.

The following were in press at the close of the fiscal year: Annual Report of the American Historical Association for 1943, vol. 2, Writings on American History. Annual Report of the American Historical Association for 1945, vol. 2, Spain in the Mississippi Valley, 1765–1794, Pt. 1, The Revolutionary period, 1765–1781; vol. 3, Spain in the Mississippi Valley, 1765–1794, Pt. 2, Postwar decade, 1782–1791; vol. 4, Spain in the Mississippi Valley, 1765–1794, Pt. 3, Problems of frontier defense, 1792–1794. Annual Report of the American Historical Association for 1947, vol. 1, Proceedings.

REPORT OF THE NATIONAL SOCIETY, DAUGHTERS OF THE AMERICAN REVOLUTION

The manuscript of the Fiftieth Annual Report of the National Society, Daughters of the American Revolution, was transmitted to Congress, in accordance with law, November 18, 1947.

APPROPRIATION FOR PRINTING AND BINDING

The congressional appropriation for printing and binding for the past year was entirely obligated at the close of the year. The appropriation for the coming fiscal year ending June 30, 1949, totals $103,000, allotted as follows:

General administration (Annual Report of the Board of Regents; Annual Report of the Secretary)	$18,500
National Museum	41,000
Bureau of American Ethnology	15,500
National Air Museum	3,000
Service division (Annual Report of the American Historical Association; blank forms; binding)	25,000
	103,000

Respectfully submitted.

W. P. True, *Chief, Editorial Division.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

REPORT OF THE EXECUTIVE COMMITTEE OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION

FOR THE YEAR ENDED JUNE 30, 1948

To the Board of Regents of the Smithsonian Institution:

Your executive committee respectfully submits the following report in relation to the funds of the Smithsonian Institution, together with a statement of the appropriations by Congress for the Government bureaus in the administrative charge of the Institution.

SMITHSONIAN ENDOWMENT FUND

The original bequest of James Smithson was £104,960 8s 6d— $508,318.46. Refunds of money expended in prosecution of the claim, freights, insurance, etc., together with payment into the fund of the sum of £5, 015, which had been withheld during the lifetime of Madame de la Batut, brought the fund to the amount of $550,000.

Since the original bequest, the Institution has received gifts from various sources, the income from which may be used for the general work of the Institution. These, including the original bequest, plus savings, are listed below, together with the income for the present year.

ENDOWMENT FUNDS

(Income for unrestricted use of the Institution)

Partly deposited in United States Treasury at 6 percent and partly invested in stocks, bonds, etc.

	Investment	Income present year
Parent fund (original Smithson bequest, plus accumulated savings)	$728, 879. 14	$43, 710. 60
Subsequent bequests, gifts, etc., partly deposited in the U. S. Treasury and partly invested in the consolidated fund:		
Avery, Robert S., and Lydia, bequest fund	54, 093. 08	2, 529. 83
Endowment fund	333, 257. 58	13, 490. 84
Habel, Dr. S., bequest fund	500. 00	30. 00
Hachenberg, George P. and Caroline, bequest fund	4, 082. 23	172. 02
Hamilton, James, bequest fund	2, 909. 75	167. 23
Henry, Caroline, bequest fund	1, 227. 61	51. 73
Hodgkins, Thomas G. (general) gift	146, 433. 84	8, 242. 69
Porter, Henry Kirke, memorial fund	290, 698. 96	12, 252. 25
Rhees, William Jones, bequest fund	1, 070. 20	55. 62
Sanford, George H., memorial fund	2, 003. 59	104. 04
Witherspoon, Thomas A., memorial fund	130, 990. 25	5, 520. 92
Special fund, stock in reorganized closed banks	2, 280. 00	132. 00
Total	969, 547. 09	42, 749. 17
Grand total	1, 698, 426. 23	86, 459. 77

The Institution holds also a number of endowment gifts, the income of each being restricted to specific use. These, plus accretions to date, are listed below, together with income for the present year.

	Investment	Income present year
Abbott, William L., fund, for investigations in biology	$103, 103. 28	$4, 393. 18
Arthur, James, fund, for investigations and study of the sun and lecture on same	40, 594. 59	1, 710. 95
Bacon, Virginia Purdy, fund, for traveling scholarship to investigate fauna of countries other than the United States	50, 854. 02	2, 143. 37
Baird, Lucy H., fund for creating a memorial to Secretary Baird	24, 438. 78	1, 030. 00
Barstow, Frederick D., fund, for purchase of animals for Zoological Park	1, 014. 79	42. 73
Canfield Collection fund, for increase and care of the Canfield collection of minerals	38, 822. 08	1, 636. 24
Casey, Thomas L., fund, for maintenance of the Casey collection, and promotion of researches relating to Coleoptera	9, 310. 03	392. 36
Chamberlain, Francis Lea, fund, for increase and promotion of Isaac Lea collection of gems and mollusks	28, 583. 86	1, 204. 75
Eickemeyer, Florence Brevoort, fund, for preservation and exhibition of the photographic collection of Rudolph Eickemeyer, Jr	514. 93	21. 66
Hillyer, Virgil, fund, for increase and care of Virgil Hillyer collection of lighting objects	6, 671. 02	281. 13
Hitchcock, Dr. Albert S., library fund, for care of Hitchcock Agrostological Library	1, 601. 64	76. 27
Hodgkins fund, specific, for increase and diffusion of more exact knowledge in regard to nature and properties of atmospheric air	100, 000. 00	6, 000. 00
Hrdlička, Aleš and Marie, fund, to further researches in physical anthropology and publication in connection therewith	18, 667. 46	786. 79
Hrdlička, special	12, 500. 00	----------
Hughes, Bruce, fund, to found Hughes alcove	19, 429. 08	818. 88
Long, Annette and Edith C., fund, for upkeep and preservation of Long collection of embroideries, laces, etc	551. 16	23. 22
Maxwell, Mary E., fund, for care, etc., of Maxwell Collection	10, 006. 87	421. 74
Myer, Catherine Walden, fund, for purchase of first-class works of art for the use and benefit of the National Collection of Fine Arts	19, 240. 71	810. 94
Strong, Julia D., bequest fund, for benefit of the National Collection of Fine Arts	10, 148. 79	427. 74
Pell, Cornelia Livingston, fund, for maintenance of Alfred Duane Pell collection	7, 523. 90	317. 11
Poore, Lucy T. and George W., fund, for general use of the Institution when principal amounts to $250,000	114, 499. 01	5, 152. 24
Rathbun, Richard, memorial fund, for use of division of U. S. National Museum containing Crustacea	10, 795. 86	454. 98
Reid, Addison T., fund, for founding chair in biology, in memory of Asher Tunis	30, 271. 31	1, 507. 57
Roebling Collection fund, for care, improvement, and increase of Roebling collection of minerals	122, 502. 71	5, 163. 18
Rollins, Miriam and William, fund, for investigations in physics and chemistry	95, 312. 29	4, 016. 45
Smithsonian employees' retirement fund	34, 382. 42	2, 903. 94
Springer, Frank, fund, for care, etc., of Springer collection and library	18, 202. 45	767. 14
Walcott, Charles D. and Mary Vaux, research fund, for development of geological and paleontological studies and publishing results thereof	381, 810. 92	16, 248. 55
Younger, Helen Walcott, fund, held in trust	50, 126. 48	3, 298. 96
Zerbee, Frances Brincklé, fund, for endowment of aquaria	962. 80	40. 78
Total	[1] 1,362, 443. 24	62, 092. 85

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[1] Decrease indicated from total listed for last year is due to adjustments in value of certain real estate holdings and to the use of a part of the Smithsonian retirement fund to purchase pension rights due employees in their transfer to the Federal retirement system.

FREER GALLERY OF ART FUND

Early in 1906, by deed of gift, Charles L. Freer, of Detroit, gave to the Institution his collection of Chinese and other Oriental objects of art, as well as paintings, etchings, and other works of art by Whistler, Thayer, Dewing, and other artists. Later he also gave funds for the construction of a building to house the collection, and finally in his will, probated November 6, 1919, he provided stock and securities to the estimated value of $1,958,591.42, as an endowment fund for the operation of the Gallery.

The above fund of Mr. Freer was almost entirely represented by 20,465 shares of stock in Parke, Davis & Co. As this stock advanced in value, much of it was sold and the proceeds reinvested so that the fund now amounts to $6,100,164.31 in a selected list of securities classified later.

SUMMARY OF ENDOWMENTS

Invested endowment for general purposes	$1,698,426.23
Invested endowment for specific purposes other than Freer Endowment	1,362,443.24
Total invested endowment other than Freer endowment	3,060,869.47
Freer invested endowment for specific purposes	6,100,164.31
Total invested endowment for all purposes	[2] 9,161,033.78

CLASSIFICATION OF INVESTMENTS

Deposited in the U. S. Treasury at 6 percent per annum, as authorized in the U. S. Revised Statutes, sec. 5591		$1,000,000.00
Investments other than Freer endowment (cost or market value at date acquired):		
Bonds	$670,887,62	
Stocks	1,258,220.55	
Real estate and first-mortgage notes	79,220.93	
Uninvested capital	52,540.37	
		2,060,869.47
Total investments other than Freer endowment		3,060,869.47
Investment of Freer endowment (cost or market value at date acquired):		
Bonds	$2,861,230.60	
Stocks	3,123,939.71	
Uninvested capital	114,994.00	
		6,100,164.31
Total investments		9,161,033.78

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[2] Decrease indicated from total listed for last year is due to adjustments in value of certain real estate holdings and to the use of a part of the Smithsonian retirement fund to purchase pension rights due employees in their transfer to the Federal retirement system.

CASH BALANCES, RECEIPTS, AND DISBURSEMENTS DURING FISCAL YEAR 1948[3]

Cash balance on hand June 30, 1947		$904, 356. 19
Receipts other than Freer endowment:		
Income from investments	$154, 933. 36	
Gifts and contributions	116, 450. 13	
Sales of publications	34, 407. 00	
Miscellaneous	24, 377. 26	
Sale and redemption of securities (net)	60, 104. 70	
Total receipts other than Freer endowment		390, 272. 45
Receipts from Freer endowment:		
Income from investments	$262, 328. 65	
Sale and redemption of securities (net)	69, 627. 73	
Total receipts from Freer endowment		331, 956. 38
Total		1, 626, 585. 02
Disbursements other than Freer endowment:		
Administrative	$47, 553. 24	
Publications	49, 395. 85	
Library	3, 596. 99	
Buildings—care, repairs, alteration	2, 282. 76	
Custodian fees, etc	3, 079. 70	
Miscellaneous	1, 093. 37	
Researches	130, 491. 98	
Smithsonian Retirement System	65, 665. 52	
Total disbursements other than Freer disbursements		303, 159. 41
Disbursements from Freer Endowment:		
Salaries	$75, 745. 70	
Purchases for collections	149, 800. 00	
Custodian fees, etc	11, 157. 07	
Miscellaneous	22, 638. 23	
Total disbursements from Freer endowment		259, 341. 00
Investment of current funds in U. S. Bonds		500, 237. 24
Total disbursements		1, 062, 737. 65
Cash balance June 30, 1948		563, 847. 37
Total		1, 626, 585. 02

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[3] This statement does not include Government appropriations under the administrative charge of the Institution.

ASSETS

Cash:			
United States Treasury current account	$418,087.11		
In banks and on hand	145,760.26		
	563,847.37		
Less uninvested endowment funds	166,613.23		
		$397,234.14	
Travel and other advances		7,438.61	
Cash invested (U. S. Treasury note)		500,237.24	
			$904,909.99
Investments—at book value:			
Endowment funds:			
Freer Gallery of Art:			
Stocks and bonds	$5,986,091.45		
Uninvested capital	114,072.86		
		6,100,164.31	
Smithsonian Institution:			
Stocks and bonds	1,929,108.17		
Real estate and mortgage notes	79,220.93		
Uninvested capital	52,540.37		
Special deposit in U. S. Treasury. Interest at 6 percent	1,000,000.00		
		3,060,869.47	
			9,161,033.78
			10,065,943.77

UNEXPENDED FUNDS AND ENDOWMENTS

Unexpended funds:			
Income from Freer Gallery of Art endowment			$357,129.31
Income from other endowments:			
Restricted		$171,210.97	
General		87,474.88	
			258,685.85
Gifts and grants			289,094.83
			904,909.99
Endowment funds:			
Freer Gallery of Art		$6,100,164.31	
Other:			
Restricted	$1,362,443.24		
General	1,698,426.23		
		3,060,869.47	
			9,161,033.78
			10,065,943.77

The practice of maintaining savings accounts in several of the Washington banks and trust companies has been continued during the past year, and interest on these deposits amounted to $600.42.

In many instances, deposits are made in banks for convenience in collection of checks, etc., and later such funds are withdrawn and deposited in the United States Treasury.

Disbursement of funds is made by check signed by the Secretary of the Institution and drawn on the United States Treasury.

The foregoing report relates only to the private funds of the Institution.

The Institution gratefully acknowledges gifts from the following:

William G. Fargo.
John A. Roebling, as a further contribution for researches in radiation.
The Viking Fund, Inc., for Iroquois research.
American Philosophical Society, for Iroquois research.
E. R. Fenimore Johnson, for research in under-water photography.
National Geographic Society, expedition to Arnhem Land.
National Geographic Society, expedition to western Panama.

The following appropriations were made by Congress for the Government bureaus under the administrative charge of the Smithsonian Institution for the fiscal year 1948:

Salaries and expenses	$1, 800, 312. 00
National Zoological Park	455, 400. 00

In addition, funds were transferred from other Departments of the Government for expenditure under direction of the Smithsonian Institution:

Cooperation with the American Republics (transfer from the State Department)	$94, 882. 00
Working Fund, transferred from the National Park Service, Interior Department, for archeological investigations in River Basins throughout the United States	73, 800. 00
Working Fund, transferred from Navy Department for research studies of radiation upon marine life as a result of atomic bomb tests at Bikini Atoll	11. 000. 00

The Institution also administers a trust fund for partial support of the Canal Zone Biological Area, located on Barro Colorado Island in the Canal Zone.

The report of the audit of the Smithsonian private funds follows:

SEPTEMBER 14, 1948.

TO THE BOARD OF REGENTS,
SMITHSONIAN INSTITUTION,
Washington 25, D. C.

We have examined the accounts of the Smithsonian Institution relative to its private endowment funds and gifts (but excluding the National Gallery of Art and other departments, bureaus, or operations administered by the Institution under Federal appropriations) for the year ended June 30, 1948, have reviewed the system of internal control and the accounting procedures of the Institution and, without making a detailed audit of the transactions, have examined or tested accounting records of the Institution and other supporting evidence, by methods and to the extent we deemed appropriate. Our examination was made in accordance with generally accepted auditing standards and included all procedures which we considered necessary in the circumstances.

The Institution maintains its accounts on a cash basis and does not accrue income and expenses. Land, buildings, furniture, equipment, works of art, living and other specimens and certain sundry property are not included in the accounts of the Institution.

In our opinion, the accompanying financial statements present fairly the position of the private funds and the cash and investments thereof of the Smithsonian Institution at June 30, 1948 (excluding the National Gallery of Art and other departments, bureaus or operations administered by the Institution under Federal appropriations) and the cash receipts and disbursements for the year.

PEAT, MARWICK, MITCHELL & CO.

Respectfully submitted.

ROBERT V. FLEMING,
VANNEVAR BUSH,
CLARENCE CANNON,
Executive Committee.

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 01296 8590